FEB. 21. *Price 4s.*

# JOURNAL OF THE PROCEEDINGS

OF THE

# LINNEAN SOCIETY.

## SUPPLEMENT TO BOTANY. No. 1.

CONTENTS.

Page

*Musci Indiæ Orientalis*; an Enumeration of the Mosses of the East Indies. By WILLIAM MITTEN, Esq., A.L.S. . 1

LONDON:

LONGMAN, BROWN, GREEN, LONGMANS & ROBERTS,

AND

WILLIAMS AND NORGATE.

1859.

SHOUT
SHARE
IT

JOURNAL

OF

# THE PROCEEDINGS

OF

# THE LINNEAN SOCIETY.

---

## SUPPLEMENT TO BOTANY.

### VOL. I.

CONTAINING

# MUSCI INDIÆ ORIENTALIS;

## AN ENUMERATION

OF THE

## MOSSES OF THE EAST INDIES.

BY

WILLIAM MITTEN, Esq., A.L.S.

LONDON:

LONGMAN, BROWN, GREEN, LONGMANS & ROBERTS,

AND

WILLIAMS AND NORGATE.

1859.

PRINTED BY TAYLOR AND FRANCIS,
RED LION COURT, FLEET STREET.

# SUPPLEMENT

TO THE

# JOURNAL OF THE PROCEEDINGS

OF THE

# LINNEAN SOCIETY OF LONDON.

---

## *Musci Indiæ Orientalis*; an Enumeration of the Mosses of the East Indies. By William Mitten, Esq., A.L.S.

[Read May 6, 1858.]

In offering the following enumeration of the Indian Musci, it will be necessary that some reasons should be given for the departure from any systematic arrangement hitherto adopted. From the date of Bridel's 'Bryologia' to that of C. Müller's 'Synopsis,' there has been no systematic arrangement of the whole order. Of these, Bridel's arrangement, from the progress of the science and the addition of an immense number of species, cannot now be followed, whilst that of the 'Synopsis' has been departed from in the following particulars:—The Cleistocarpous Order has been suppressed, because its component groups are readily referable to families of higher development: thus, *Sphagnaceæ* have been removed from the side of *Leucobryaceæ*, the leaves of the latter being here understood to be composed entirely or almost entirely of a dilated nerve; *Fissidenteæ* are evidently so closely allied to the distichous *Rhizogonia*, that the place of the group must be with *Mnium*; *Polytrichaceæ* have been removed from the *Mniaceæ* on account of the different structure of their peristome; *Leptotrichaceæ* have been united with *Dicranaceæ*, being destitute of distinctive character; *Pottioideæ* are here called *Trichostomaceæ*, of which the perfect peristome is that of *Barbula*, *Tortula*, or

*Syntrichia*. The arrangement of the Pleurocarpous Mosses in the 'Synopsis' is rather an agglomeration of species than a systematic disposition: thus, *Neckera* is composed of species whose sole point of affinity lies in the peristome, which, in all the tribe here called *Arthrodonti*, presents but one typical form, of which the highest development is observable in *Bryaceæ*, *Bartramiaceæ*, and in most of the pleurocarpous groups. This peristome consists of an external one of sixteen teeth, each of which is composed of three series of cells, articulated to each other: the two outer of these series are frequently combined into one, but generally having the line of division evident, sometimes separating along this line, as in *Dicranum*, *Fissidens*, *Grimmia*, and many of the *Trichostomaceæ*, of rather firm consistence and generally reddish colour; and the inner series consists of hyaline bladdery cells (to the expansion or contraction of which the hygroscopic action is principally due) reaching across the inner side of the two external series and closely adherent to them. The internal peristome consists of a more or less elongated folded membrane, divided above into processes, often perforated along the carina, with three cilia between each, which at each joint have a small appendage. In all the groups to which this structure appertains, no generic importance is attached to the absence of any part or of the whole peristome: thus, the first modification is the absence of the small appendages to the cilia; next the cilia themselves are reduced in number, shortened, or absent; then the processes decrease in width, the supporting membrane is shortened, and finally the internal peristome is entirely absent. The external peristome presents all stages of development, from the teeth with the internal series of cells highly developed and forming "trabeculæ," to those in which the series is difficult to observe, if present at all; and, as with the internal, the whole external peristome is at times wanting. Many stages of the above transitions are observable in *Bryaceæ* and *Bartramiaceæ*; and as they occur in species which in every other particular possess a very close affinity, it becomes evident that the genera of Mosses cannot be founded on the greater or less development or even absence of an organ which is for the most part reducible to a single typical form, except at the sacrifice of every character plainly observable in other portions of the species. Further, there occur some mosses which produce a peristome or not, according as the theca is more or less developed and elongated: this is seen in *Desmatodon* (as here understood) and in *Encalypta*. The form of the theca, upon which several

genera have been founded by M. Schimper, cannot be trusted to afford a sufficient character: for in *Climacium* and *Cylindrothecium* the species occasionally produce thecæ which are in no way different from the unequal-sided form so general in *Hypnaceæ*; and it appears to be a general law, that the more the theca is inclined or pendulous, the greater is the development of the peristome. The form of the calyptra, whether dimidiate or mitriform, is also, as furnishing a generic character, to be taken with some caution: thus, it serves only to perplex the student to separate *Gumbelia* from *Grimmia*, and *Conomitrium* from *Fissidens*, by such a character, unless it be accompanied by some differences in the other organs of the species. *Meteorium* is here separated from *Trachypus*, the first being understood as a modification of *Hypnum*, the second bearing the same relation to *Leskea*; but *Hedwigia*, *Hedwigidium*, and *Braunia*, though distinguished by scarcely any other character than the calyptra (which passes through forms analogous to those observable in *Grimmia*), are here united and joined with *Leucodontaceæ*, to which they have the closest affinity in the structure of their leaves and mode of growth; for in these days sections cannot be arbitrarily distinguished as acrocarpous or pleurocarpous, when in *Fissidens* the fructification is produced from any part of the stem, and when bryologists have not been able readily to discover to which section *Braunia* should be referred.

The groups, as here understood, are founded upon a difference in the mode of growth, or in the structure of the leaves: this last character has received but little attention from bryologists generally; but by it alone *Bryaceæ* are readily separated from *Mniaceæ*, and *Neckeraceæ* from *Hypnaceæ*, and these from *Leskeaceæ*. The presence or absence of the nerve has been taken advantage of to separate Bridel's *Stereodon* from *Hypnum*, the character serving rather as a ready means of ascertaining the place of a species than as offering any considerable structural difference; yet it will be observed that the species most nearly allied to each other by this division fall together. A separate order of *Hookeriaceæ* has not here been maintained, the sole affinity between its component groups being derived from the calyptra. *Rhacopilum* has been removed from *Hypopterygiaceæ*, with which it has no affinity, and placed in *Leskeaceæ*. The section here called *Nematodonti* presents a peristome whose structure appears to be sufficiently different from that of other mosses,—in *Polytrichiaceæ* the so-called teeth being composed of adglutinated inarticulate filaments.

The materials for the present enumeration have been derived from the collections of Buchanan Hamilton, Gardner, and Wallich, in Nepal; Strachey and Winterbottom, in Kumaon; Royle, in the North-west Himalaya; Perrottet*, Schmid, Foulkes, McIvor, Gardner, and G. Thomson, in the Nilghiri Mountains; Griffith†, in Assam and the Khasia Mountains; Law, in the Concan; Wight, near Madras; Gardner, Thwaites, Walker, and Maxwell, in Ceylon; and Wallich and Parish, in Pegu; but more especially from those made by Dr. Thomson in North-west India and Western Tibet, and by Dr. J. D. Hooker in the Sikkim-Himalaya and East Nepal, and in conjunction with Dr. Thomson in the Khasia Mountains in East Bengal.

Through the great liberality of Sir W. J. Hooker all the original specimens from whence the descriptions and figures in the 'Musci Exotici' and 'Icones Plantarum Rariorum' were derived, have been examined; and, lastly, the entire extensive collections of Dr. Thomson and Dr. J. D. Hooker were entrusted to the author for segregation and distribution. A manuscript catalogue of these has been prepared by Mr. W. Wilson, and is in part published in the last volume of the 'Kew Journal of Botany;' but the determinations are in many cases doubtful, and no descriptions accompany it. I have, however, adopted many of the names applied to the new species, and quoted the MS. in the following enumeration.

Hurst, Sussex, March 1858.

*Obs.* A mark of admiration (!) is affixed to the names of the collectors whose specimens have been examined; its absence denotes that such specimens have not been seen by the author.

* Dr. Montagne very kindly communicated all the species of interest collected by Perrottet.

† For the correct understanding of many of the species figured and described in Griffith's "Posthumous Papers," I am indebted to N. B. Ward, Esq., who kindly submitted to me all the specimens he received from that author, which were accompanied with descriptions corresponding with those in the 'Notulæ,' published at Calcutta, but which are very little known, if at all, to European bryologists.

# CLAVIS ANALYTICA.

## S. 1. HOMODICTYA.

### * Schistocarpi.

#### I. Andreæaceæ.

1. Andreæa, *Ehr.*

### ** Stegocarpi.

#### † Arthrodonti.

#### I. Dicranaceæ.

1. Pleuridium, *Brid.*
2. Garckea, *C. Müll.*
3. Leptotrichum, *Hampe.*
4. Trematodon, *Rich.*
5. Leucoloma, *Brid.*
6. Dicranum, *Hedw.*
7. Didymodon, *Hook.*
8. Holomitrium, *Brid.*

#### II. Leucobryaceæ, *C. Müll.*

1. Leucophanes, *Brid.*
2. Octoblepharum, *Hedw.*
3. Leucobryum, *Hampe.*
4. Schistomitrium, *Dozy & Molk.*

#### III. Trichostomaceæ.

1. Weissia, *Hedw.*
2. Tortula, *Hedw.*
3. Anœctangium, *Hedw.*
4. Hymenostylium, *Brid.*
5. Barbula, *Hedw.*
6. Desmatodon, *Brid.*
7. Syntrichia, *Brid.*
8. Syrrhopodon, *Hook. & Grev.*
9. Calymperes, *Swartz.*
10. Encalypta, *Schreb.*

#### IV. Grimmiaceæ.

1. Cinclidotus, *Beauv.*
2. Grimmia, *Ehrh.*
3. Glyphomitrium, *Brid.*

#### V. Orthotrichaceæ.

1. Drummondia, *Hook.*
2. Zygodon, *Hook. & Tayl.*
3. Orthotrichum, *Hedw.*
4. Ulota, *Brid.*
5. Macromitrium, *Brid.*
6. Schlotheimia, *Brid.*

#### VI. Funariaceæ.

1. Physcomitrium, *Brid.*
2. Entosthodon, *Schwægr.*
3. Funaria, *Schreb.*

#### VII. Splachnaceæ.

1. Voitia, *Hornsch.*
2. Tayloria, *Hook.*
3. Splachnum, *L.*

#### VIII. Bartramiaceæ.

1. Meesia, *Hedw.*
2. Oreas, *Brid.*
3. Bartramia, *Hedw.*
4. Philonotis, *Brid.*
5. Breutelia, *Schimp.*

#### IX. Bryaceæ.

1. Orthotrichum, *Schwægr.*
2. Mielichoferia, *Hornsch.*
3. Webera, *Hedw.*
4. Bryum, *Dill.*

#### X. Hypnaceæ.

1. Fabronia, *Raddi.*
2. Hypnum, *Dill.*
3. Meteorium, *Brid.*
4. Trachyloma, *Brid.*
5. Stereodon, *Brid.*
6. Chartomitrium, *Dozy & Molk.*
7. Phyllogonium, *Brid.*
8. Sauloma, *Hook. fil. & Wils.*
9. Lepidopilum, *Brid.*
10. Hookeria, *Smith.*

XI. NECKERACEÆ.

1. Stereophyllum, *Mitt.*
2. Neckera, *Hedw.*

XII. LEUCODONTACEÆ.

1. Hedwigia, *Ehrh.*
2. Leucodon, *Schwægr.*
3. Cryphæa, *Brid.*
4. Cleistostoma, *Brid.*

XIII. LESKEACEÆ.

1. Anomodon, *Hook.*
2. Rhegmatodon, *Brid.*
3. Trachypus, *Schwægr.*
4. Leskea, *Hedw.*
5. Heterocladium, *Schimp.*
6. Callicostella, *C. Müll.*
7. Rhacopilum, *Brid.*

XIV. MNIACEÆ.

1. Fissidens, *Hedw.*
2. Rhizogonium, *Brid.*
3. Mnium, *Dill.*
4. Timmia, *Hedw.*
5. Mniadelphus, *C. Müll.*
6. Daltonia, *Hook.*

XV. HYPOPTERYGIACEÆ.

1. Cyathopterygium, *Brid.*
2. Hypopterygium, *Brid.*

†† NEMATODONTI.

I. BUXBAUMIACEÆ.

1. Diphyscium, *Mohr.*

II. POLYTRICHACEÆ.

1. Atrichum, *Beauv.*
2. Oligotrichum, *Decand.*
3. Pogonatum, *Brid.*
4. Polytrichum, *Dill.*
5. Lyellia, *R. Br.*

S. 2. HETERODICTYA.

I. SPHAGNACEÆ.

1. Sphagnum, *Dill.*

## MUSCI.

### S. 1. HOMODICTYA. *Foliorum cellulæ ejusdem structuræ.*

#### * SCHISTOCARPI.

##### § 1. ANDREÆACEÆ.

##### 1. ANDREÆA, *Ehrh.*

1. A. RIGIDA (*Wils. in Kew Journ. Bot.* ix. p. 289). Caulibus elongatis, foliis falcatis secundis e basi late ovali brevi longe subulato-attenuatis, nervo crasso subulam superiorem totam occupante, cellulis parvis areolatis, margine integerrimis inferne planiusculis.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 1).

*A. falcata* (Schimp.) similis, foliis autem e basi ovata nervo excurrente longe subulatis.

2. A. petrophila, *Ehrh.* (A. petrophila et A. ambigua, *Wils. l. c.* p. 289.)

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 2, 3, 5, 6 *d*).

3. A. INDICA (*Mitten*). *A. petrophilæ* simillima, sed robustior, foliis ambitu ovatis acuminatis e basi subquadrata erecta cauli adpressa

cellulis oblongis parallelogrammaticis parietibus tenuibus areolata patentibus concavis dorso papillosis, cellulis parvis parietibus crassis, perichætialibus ovatis convolutis.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. H.*! (No. 4, 6 *a*).

*A. petrophilæ* colore habitu perichætioque similis, structura tamen folii baseos valde diversa statim dignoscenda.

4. A. DENSIFOLIA (*Mitten*). Habitus *A. petrophilæ*, foliis ovato-lanceolatis concavis obtusiusculis dorso papillosis, cellulis elongatis superioribus obscuris inferioribus longioribus iis *A. petrophilæ* similibus, perichætialibus elongato-ovalibus acutis convolutis, theca parva ad $\frac{1}{4}$ longitudinis dehiscente.—*Acroschisma densifolia*, Wils. l. c. p. 289.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 6 *b*).

*A. petrophilæ* similis, folia autem paululum angustiora siccitate appressa stricta. *Theca* parva.

## ** STEGOCARPI.

### † ARTHRODONTI

*Peristomium* dentibus e triplici serie cellularum inter se adglutinatarum conditis; seriebus externis duabus coloratis sæpe rubris, in unam sæpe coalitis; serie unica interna latiore teneriore, hyalina, maxime hygroscopica, trabeculas formante.

### § 1. DICRANACEÆ.

Archidiaceæ, Bruchiaceæ, Pleuridiaceæ, Trichostomaceæ (ex parte), Weissiaceæ ex parte, Zygodonteæ ex parte, Seligeriaceæ ex parte, et Dicranaceæ, *Schimp. Coroll.*

#### 1. PLEURIDIUM, *Brid.*

1. P. denticulatum, *Mitten.* (Astomum denticulatum, *C. Müller*, *Bot. Zeit.* 1853, p. 18.)

*Hab.* In Mont. Nilghiri, *Schmid.* E descriptione *P. nervoso* simillimum.

2. P. TENUE (*Mitten*). Dioicum? caule erecto simplici gracillimo, foliis patentibus lanceolatis concavis marginibus integerrimis, nervo lato tenui folii partem superiorem totam occupante, cellulis basi tantum a nervo distinctis elongatis teneris, perichætialibus caulinis conformibus, theca in pedunculo elongato erecta ovali-cylindrica in rostrum rectum obtusum sensim acuminata.—*Phascum tenue*, Wils. l. c. p. 290.

*Hab.* In Himalayæ orientalis regione alpina, Sikkim, *J. D. H.*! (No. 30). Inter cæspitulos *Weberæ polymorphæ* specimina perpauca carpsi.

*Caulis* vix lineam longitudine superans, gracillimus. *Pedunculi* bilineares.—A *P. alternifolio* et speciebus affinibus statura multo graciliore et pedunculo elongato recedit, structura foliorum autem omnino convenit. Species singularis positionem eandem respectu *Leptotrichi* ut *Phascum bryoides* respectu *Pottiæ* tenens.

*Obs. Phascum nepalense* (Brid. i. p. 755) speciem obscuram non enumeravi.

### 2. Garckea, *C. Müller, Synops.* i. p. 424.

1. G. phascoides, *C. Müller, l. c.*; *Dozy et Molkenb., Musci Frond. inediti Archipel. Ind.* t. lix. (Dicranum phascoides, *Hook. Bot. Miscell.* 1830, t. 30. Grimmia flexuosa, *Griff. Notulæ*, p. 412; *Icon. Plant. Asiat.* ii. pl. lxxix. f. 3.)

*Hab.* India tropica; Nepal, *Wallich*! "Sylhet, Maamloo collium Khasyanorum, Deboro prope Rangagurrah, *Griffith*! Moulmein, *Parish*!

### 3. Leptotrichum, *Hampe:*

Didymodon ex parte, *Hedw.*; Trichostomum ex parte, *B. & S. Bryol. Europ.*; Dicranella et Trichodon, *Schimper, Corol.*; Angstrœmia, *C. Müller, Synops.*; Gyrophyllum, *Dozy et Molk.*; Symblepharis, *Mont.*

*Peristomii* structura *Dicrani*, cui folia etiam arcte conveniunt, vix nisi defectu cellularum alarium et statura graciliore plantularum discrepans.

#### * *Pedunculus flexuosus.*

1. L. phascoides. (Angstrœmia phascoides, *C. Müller, Bot. Zeit.* 1853, p. 39.)

*Hab.* In Mont. Nilghiri, *Schmid.*

2. L. khasianum (*Mitten*). Dioicum? "caule simplici brevi, foliis falcatim subsecundis e basi lata longissime subulato-acuminatis acuminibus infra medium obsolete canaliculatis, vena crassiuscula, seta flexuosa, capsula inclinata cernuave ovato-elliptica siccatione sulcata, operculo conico-subulato, calyptra ventricosa lævi." *Griff.*

Dicranum khasianum, *Griff. Not.* p. 418; *Icon. Pl. Asiat.* ii. pl. xciv. f. 2.—Campylopus tenuis, *Wils. in Sched. l. c.* p. 296.

*Hab.* In Mont. Khasianis, ad Moflong, *Griff.*! et in regione subtropica, *J. D. H.* et *T. T.*! (No. 97). In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 95). In insula Ceylon, *Thwaites*!

*L. euphorocladæ* (*Angstrœmia*, C. Müller) simillimum, sed theca, apophysi nulla, minus plicata, et cellulis folii partis inferioris laxioribus latioribusque, nervo angustiore, peristomio teneriore. Caulis in speciminibus peninsularibus bi- tri-linearis, in Ceylanicis uncialis.

#### ** *Pedunculus erectus.*

3. L. pomiforme (*Mitten*). Dioicum, humile, gracile, caule erecto simplici, foliis laxis patentibus lanceolatis nervo tenui sub summo apice evanido cellulis teneris ubique pellucidis, perichætialibus latioribus cæteroquin caulinis similibus, theca in pedunculo tortili stramineo globoso-ovata æquali aurantiaca, operculo subulato obliquo longitudine capsulam superante, peristomio dentibus brevibus inæqualibus annulo duplici.

Didymodon pomiforme, *Griff. Not.* p. 431; *Icon. Plant. Asiat.* ii. pl. lxxx. f. 3.—Angstrœmia exigua, *C. Müller, Wils. l. c.* p. 296.

*Hab.* "Rupes ripæque Maamloo collium Khasyanorum," *Griffith*! In Himalayæ orient. reg. temp. ad Darjeeling, in ripis argillosis, *J. D. H.*! (No. 40).

Caulis bi- quadri-linearis, altitudine variabilis.—*L. exiguo* (Angstrœmia, *C. Müller*) habitu magnitudineque affine, foliis autem laxioribus patentibus varie flexis, e cellulis latioribus laxis pellucidis areolatis, satis diversum.

4. L. tortile, *Hampe.*

*Hab.* In Nepal, *Wallich*! In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. H.*! (No. 21, 24, 25, 41).

5. L. DIVARICATUM. Dioicum, caule simplici, foliis e basi subquadrata erecta subulatis divaricatis flexuosis incurvisque integerrimis nervo in apicem evanido, cellulis elongatis firmiusculis, perichætialibus basi magis dilatatis cæteroquin conformibus, theca in pedunculo stricto ovali suberecta siccitate paululum plicata, operculo subulato obliquo, peristomio e dentibus rubris dicranis, annulo duplici.

Dicranum subulatum, *Griff. Not.* p. 417.—D. cerviculatum, *Wils. l. c.* p. 296.

*Hab.* In montibus Khasianis Bengaliæ orientalis. "Ripæ circa Moflong," *Griffith*! et Churra regione tropica, *J. D. H.* et *T. T.*! (No. 83).

*L. subulato* et *cerviculato* (Angstrœmia, *C. Müller*) comparandum. *Color* fusco-luteus. Caulis subuncialis, foliis remotiusculis rigidulis. A *L. subulato* foliis divaricatis, perichætialibus basi brevibus, statim dignoscitur. A *L. cerviculato* structura foliorum, nervo angustiore apice tantum a foliorum parte subulata indistincta, satis diversum videtur.

6. L. GRIFFITHII (*Mitten*). Dioicum, caule simplici, foliis e basi subquadrata erecta subulatis patentibus integerrimis canaliculatis, nervo subulam superiorem totam occupante, cellulis basi laxis pellucidis, perichætialibus basi latioribus, theca in pedunculo gracili breviusculo tortili recto ovato-cylindrica erecta siccitate plicata, peristomio dentibus solidis dicranisve, annulo duplici.

Dicranum khasianum, *Griff. Not.* p. 418. var. A. majus.

*Hab.* In mont. Khasia. "Rupes madidæ ad Churra et Moflong," *Griffith*!

Habitus *L. khasyani*, sed caulis gracilior trilinearis—sesquiuncialis. Folia basi laxius areolata; pedunculus trilinearis gracilior rectus tortilis; theca magis cylindrica. A *L. divaricato* statura graciliore, foliis patentibus basi cellulis majoribus, nervo in parte subulato minus distincto et peristomio pallidiore ochraceo differt.

7. L. AMPLEXANS (*Mitten*). Monoicum, caule subsimplici, foliis e basi subquadrata superne dilatata erecta late vaginanti subulatis patentibus incurvis, siccitate crispulis, integerrimis, apice tantum minute parce denticulatis, nervo ubique distincto, cellulis basi elongatis teneris pellucidis superne brevibus viridibus, perichætialibus conformibus,

theca in pedunculo recto elongato ovali inclinata symmetrica lævi, peristomii dentibus breviusculis rubris solidis geminatis.

*Hab.* In Nepal, *Wallich*!

*L. divaricato* habitu staturaque similis, differt tamen foliis basi latius vaginantibus, nervo in folio nullibi dilatato et florescentia. In caule unico fructifero ramulos breves foliis sacculatis, omnino ut in speciebus congeneribus monoicis, quamvis antheridias includentibus, non certe observavi. Peristomium in exemplo uno perfecto e dentibus geminatim coalitis.

8. L. TORTIPES (*Mitten*). Monoicum, caule subsimplici, foliis patentibus e basi elliptica cellulis amplis pellucidis areolata subulatis integerrimis apiceve subdenticulatis nervo latiusculo subulam totam occupante canaliculatis, perichætialibus longiusculis vaginantibus laxe areolatis, theca in pedunculo gracili fusco recto tortili ovato-cylindrica, peristomio dentibus solidis dicranisve teneris aurantiacis, flore masculo in ramulo brevi terminali.

Trichostomum delicatulum ex parte, *Wils. l. c.* p. 321.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 8).

Formis nonnullis parvulis *T. homomalli* simile, sed folia basi ovalia ellipticave cellulis latiusculis laxis areolata.

9. L. plicatum, *C. Müller, Synops.* i. p. 446.

*Hab.* In mont. Nilghiri, *Perrottet*!

10. L. LAXISSIMUM (*Mitten*). Monoicum, tenellum, gracillimum, caule breviusculo subsimplici, foliis patentibus e basi elliptica laxissime areolata longissime tenuissime subulato–attenuatis, nervo subulam totam occupante a medio ad apicem minute denticulatis, perichætialibus basi latioribus vaginantibus, theca in pedunculo gracili luteo tortili subcylindrica tenera, operculo rostro longe subulato capsulam subæquante, peristomii dentibus dicranis pallidis cruribus gracilibus elongatis, flore masculo satis magno in ramulo brevi quasi pedicellato, foliis perigonialibus brevibus ovatis.

Trichostomum delicatulum ex parte, *Wils. l. c.* p. 321.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 7 et 9).

Color plantularum luteo-fuscus. *L. plicato* quocum statura convenit primo adspectu simile, sed folio basi latiore multo laxius areolato statim dignoscendum.

11. L. capillaceum. (Distichium, *Bryol. Europ.* fasc. xxx.—Didymodon cirrhifolius, *Harvey, Hook. Icon. Plant. Rar.* t. 18.)

*Hab.* In Himalayæ reg. alp. et temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 20, 34, 38, 39, 99); in Tibetiæ occident. reg. temp. et alp., *T. Thomson*! (No. 32, 33, 35, 36, 37, 37*b*); *H. Strachey* (No. 274).

12. L. inclinatum, *Mitten*. (Distichium, *Bryol. Europ.* fasc. xxx.)

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. H.* (No. 22*b*); in

Tibetiæ occident. reg. alp., *T. Thomson* (No. 275), et ad Raj Hoti, *Strachey et Winterbottom.*

13. L. SETIFERUM (*Mitten*). Dioicum, caule simplici erecto, foliis e basi erecta quadrata vaginante superne parce crenulatis subito longiuscule setaceo-attenuatis integerrimis undique patentibus flexuosis, nervo canaliculato partem subulatam totam fere occupante, cellulis basi elongatis firmiusculis flavo irroratis, perichætialibus basi parum longioribus, theca in pedunculo elongato gracili recto luteo seniore fusco inclinata ovali aurantiaca basi strumosa siccitate plicata, ore obliquo, operculo longe subulato, peristomio dentibus dicranis rubris.

Species a *Cl. Wils.* cum concrescentibus commutata, *l. c.* p. 295.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 94 *b*).

Primo adspectu formis majoribus *L. heteromalli* (Angstrœmia, *C. Müller*) non dissimile, sed foliis rigidioribus e basi erecta vaginante satis diversum. A *L. divaricato*, cui proxime accedit, foliis patentibus tenuiter setaceis, et, ubi pars erecta cauli adpressa in subulam evadit, crenulatis, nervo latiore et theca inæquali strumosa, certe distat.

14. L. heteromallum. (Angstrœmia, *C. Müller, Syn.* i. p. 432.)

*Hab.* In Himalayæ orient. reg. temp. et. alp., Sikkim, *J. D. Hooker*! (No. 10, 12, 13, 14, 15, 15*b*, 16).

15. L. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 39.

*Hab.* In mont. Nilghiri, *Schmid.*

16. L. MOLLICULUM (*Mitten*). Dioicum, caule brevi simplici, foliis patentibus ovatis elongatis obtusis acutatisve concavis nervo tenui sub apicem evanido margine superne serratis, cellulis inferne elongatis superne brevioribus sub-obscuris flaccidis, perichætialibus e basi erecta superne dilatata vaginante subulatis squarrosis apicibus obtusis; theca in pedunculo breviusculo luteo ovali sub-erecta basi substrumosa, operculo subulato curvirostrato, peristomio dentibus rubris dicranis.

Dicranum patulum ex parte, *Wils. l. c.* p. 295.

*Hab.* In Himalayæ boreali-occident. reg. temp., *T. Thomson* (No. 98).

Statura *L. Miqueliani* (Weissia, *Mont.*), sed foliis flaccidis, nervo tenuiore et cellulis multo laxioribus.

17. L. patulum, *Mitten.* (*L. squarroso* persimile, sed foliis margine minute denticulatis.—Dicranum patulum ex parte, *Wils. l. c.* p. 296.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, inter cæspites Bartramiæ, *J. D. Hooker*! (No. 94).

A *L. molliculo* forma et directione foliorum acutorum diversum; a *L. squarroso*, quocum statura, habitu coloreque convenit, marginibus foliorum denticulatis distinguitur.

18. L. virens, *Mitten.* (Angstrœmia, *C. Müller.*—Dicranum strumiferum, *Wils. l. c.* p. 295.)

*Hab.* In Tibetiæ occident. reg. temp., *T. Thomson* (No. 55).

19. L. himalayanum, *Mitten*. (Didymodon vaginatus, *Hook. Lond. Journ. Bot.* 1840, ii. p. 5; *Icon. Plant. Rar.* t. 18.—Symblepharis Hookeri, *Wils. l. c.* p. 292.—S. dilatata, *Wils., l. c.* p. 293.)

*Hab.* In Himalaya temperata; Nipal, *Wallich*! et *J. D. Hooker* (No. 108, 108*b*, 109); Sikkim, *J. D. Hooker* (109*b*, 109*c*, 110, 110*b*, 111, 111*b*, 112, 113, 113*b*, 125*b*, 150). In Kumaon. reg. temp., *Strachey et Winterbottom, et T. Thomson* (No. 125).

20. L. Reinwardti, *Mitten*. (Angstrœmia, *C. Müller, Syn.* i. p. 437.—Gyrophyllum Reinwardti, *Dozy et Molk. Musc. Frond. Archip. Ind.* t. xlv.—Symblepharis dilatata ex parte, et S. breviseta, *Wils. l. c.* p. 293.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 136, 136*b*).

Habitus omnino precedentis, quocum structura adeo convenit ut nulla methodo naturali separari potest. Peristomium dentibus æquidistantibus dicranis ab eo *L. Himalayani* et specierum aliarum *Symblephari* generi adscriptarum diversum, sed differentia hæcce momenti ejusdem ut in speciebus *Orthotrichi* generis censenda est.

21. L. Wahlenbergii, *Mitten*. (Angstrœmia, *C. Müller, Syn.* ii. p. 610.)

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 112*b*, 151, 151*b*).

## 4. Trematodon, *Rich.*

1. T. longicollis, *Rich.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 48, 49). In Ceylon, *Gardner* (No. 45). In Assam regione superiore thecis maturis Aprili—Maio, *Griffith*!.

2. T. conformis (*Mitten*). Monoicus, caule brevi simplici dichotomove, foliis erectis patulis flexuosisve mollibus, caulinis inferioribus lanceolatis superne remote serratis nervo sub apice obtuso evanido carinatis margine subrecurvo, superioribus perichætialibusque basi latioribus sensim angustatis elongatis, omnibus cellulis inferne elongatis superne oblongis pellucidis teneris, theca in pedunculo elongato stramineo ovali cylindrica curvata siccitate plicata, collo basi substrumoso capsula duplo longiore, operculo subulato longi-curvirostrato, peristomio dentibus rubris lanceolatis perforatis annulo triplici, flore masculo laterali, foliis perigonialibus caulinis conformibus.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 47). In Nepal, *Wallich*!.

*T. longicolli* simillimus, sed foliis laxius areolatis, caulinis superioribus et perichætialibus conformibus, nunquam, ut in *T. longicolli*, a basi vaginante dilatata subulatis.

3. T. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 40.

*Hab.* In mont. Nilghiri, *Schmid.*

4. T. paucifolius, *C. Müller, Syn.* i. p. 459.
*Hab.* In mont. Nilghiri, *Schmid.*

5. T. sabulosus, *Griff. Not.* p. 413; *Icon. Plant. Asiat.* pl. lxxxii. f. 1.
*Hab.* "Ad ripas arenosas fluminis Burrumpootur tractumque sabulosum huic vicinum" et in Assam editioribus humidis frequentissime, *Griffith* ! In Bootan, *Booth* !.
A speciebus aliis indicis, foliis brevibus statim distinguitur. A descriptione *T. paucifolii* foliis margine recurvis varie flexis contortisque discrepat, neque cum *T. ambiguo* comparandus.

6. T. DECIPIENS (*Mitten*). Monoicus, caule erecto ramoso, foliis flaccidis patentibus lanceolatis obtusis planiusculis nervo tenui sub apice denticulato evanido, perichætialibus basi parum latioribus, omnibus cellulis laxissimis elongatis pellucidis, theca in pedunculo gracili luteo inclinata cylindracea lævi, collo brevissimo, operculo subulato, peristomii dentibus cruribus longis ad basin discretis teretiusculis, annulo composito, flore masculo in ramulo terminali foliis intimis brevibus coloratis.
Trichostomum ? pellucidum, *Wils. l. c.* p. 321.
*Hab.* In insula Ceylon, *Gardner* ! (No. 44); *in Herb. Peradeniensi* (No. 58). Etiam ex insula Java accepi (sub nom. *Orthodontii infracti, Dozy et Molk*).
Species a reliquis *Trematodontium* collo brevi remota, sed habitu directioneque thecarum et collo quamvis brevi similis, transitionem *Trematodontium* in *Leptotrichum* ostendens. Caulis circiter quadrilinearis, pedunculus ejusdem longitudinis.

## 5. LEUCOLOMA, *Brid.*

1. L. Taylori. (Syrrhopodon, *Schw. Supp.* t. 132.)
*Hab.* In Nepal, *Wallich* ! in Rangoon, *McLelland.*

2. L. TENERUM (*Mitten*). Caule unciali-sesquiuncali dichotomo curvato fusco-nigro gracili, foliis patulis flexuosis apicalibus sub-secundis lanceolatis tenuiter acuminatis, nervo gracili sub summo apice vix denticulato evanido, dorso lævibus, cellulis (ubi folia latissima sunt) triseriatis, serie interna cellulis oblongis obscuris, intermedia elongatis, exteriore scariosis hyalinis, alaribus exterioribus hyalinis, interioribus rubris.
*Hab.* In peninsula Malayana ad Moulmein, *Rev. J. Parish* !
A *L. molli* (C. Müller) insularum Javæ et Hongkong incola, quocum magnitudine convenit, foliis magis tortilibus patulis minus obscure viridibus sub-lutescentibus, dorso lævi nec papilloso, margine ad medium folii hyalino et cellulis in serie nervo proxima obscurioribus differt.

3. L. AMŒNE-VIRENS (*Mitten*). Caule decumbente curvato ramoso, foliis falcato-secundis e basi elliptica lanceolatis dorso lævibus nervo in apicem subdenticulatum evanido, cellulis oblongis minutis pellucidis margine angustis hyalinis, alaribus paucis incrassatis fusco-rubris.

*Hab.* In peninsula Indiæ orientalis ad Madras, *Wight*! in mont. Khasianis in rupibus ad torrentem Burtapanee dictum, *Griffith*! in insula Ceylon, *Gardner*!

*L. Sieberi* simillimum, sed foliis dorso lævibus minusque opacis.

## 6. Dicranum, *Hedw.*

### * *Pedunculus erectus.*

1. D. edentulum (*Mitten*). Dioicum? caule decumbente ramoso, foliis patentibus e basi late ovali acuminatis concavis integerrimis, nervo tenui sub summo apice evanido, marginibus superne involutis, cellulis elongatis angustis, alaribus incrassatis intense flavo-fuscis, perichætialibus in cylindrum angustum pedunculum totum obvelantem convolutis, theca in pedunculo breviusculo ovali cylindrica ore parvo, operculo longe subulato-rostrato.

D. scariosum ex parte, *Wils. l. c.* p. 294.

*Hab.* In insula Ceylon, *Gardner* (No. 57, 60, 61).

*D. macrocalyci* (Eucamptodon, *C. Müller*) habitu, statura adspectuque persimile, sed paululum minor et foliis nervosis.

2. D. gymnostomum. Dioicum, habitu *D. scoparii*, foliis secundis lanceolato-subulatis latiusculis margine dorsoque superne serrulatis nervo angusto percurrente, cellulis elongatis parietibus crassiusculis valde interruptis, alaribus obscuris fuscis, perichætialibus interioribus in cylindrum longiusculum convolutis apiculis erectis brevibus, theca in pedunculo rubro elongato erecta inclinatave cylindracea æquali, ore parvo, operculo subulato-recte-rostrato, peristomio nullo nisi membranæ teneræ fragmenta, flore masculo nidulante.

D. rugulosum et D. Billardieri, *Wils. l. c.* pp. 294, 295.

*Hab.* In Himalayæ orient. reg. temp. et alp., *J. D. H.* (No. 67, 67*b*, 70, 70*b*).

*D. scoparo*, quoad magnitudinem, habitum coloremque, simillimum, sed foliis perichætialibus internis magis exsertis erectis et theca cylindracea gymnostoma. A *D. edentulo*, quocum forma thecarum convenit, foliis longe subulatis, perichætialibus in cylindrum vix foliis caulinis longiorem, pedunculo perichætio quadruplo longiore, et adspectu totius plantæ valde diversum.

3. D. himalayanum (*Mitten*). Dioicum? habitu *D. scoparii*, foliis falcatis secundis lanceolatis longe subulatis nervo angusto percurrente, marginibus integerrimis, cellulis elongatis angustis parietibus crassiusculis interruptis, alaribus fuscis distinctis, perichætialibus in cylindrum brevem convolutis, internis apice obtusissimis apiculo brevissimo nullove, theca in pedunculo elongato rubro ovali erecta æquali, operculo subulato oblique rostrato, peristomio parvo dentibus rubris integris dicranisque.—D. scariosum ex parte, *Wils. l. c.* p. 294.

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. H.*! (No. 71, 71*b*, 88); in Kumaon, *Strachey et Winterbottom*!

*D. gymnostomo* gracilius, foliis caulinis integerrimis, perichætialibus non cuspidatis et peristomio perfecto.

4. D. assimile, *Hampe*. (D. scoparium, var., *Wils. l. c.* p. 295.)

*Hab.* In Himalayæ orient. reg. temp., *J. D. H.* (No. 50, 68); ad Madras, *Wight*!

5. D. brevisetum, *Dozy et Molk*. (Megalostylium *eorund.*, *Musc. Archip. Ind.* t. xliv.)

*Hab.* In insula Ceylon, *Gardner*! (No. 56, 58, 59).

6. D. LORIFOLIUM (*Mitten*). Dioicum, habitu *D. scoparii*, foliis anguste lanceolatis loriformi-attenuatis, nervo sub summo apice evanido dorso superne carinis pluribus serratis exarato margine superne argute serrulato, cellulis elongatis parietibus angustis alaribus distinctis fuscis, perichætialibus in cylindrum convolutis internis e basi latissima vaginante subito in acumen loriforme sublæve attenuatis, theca in pedunculo elongato rubro cylindrica erecta, operculo subulato recto rostrato, peristomio dentibus rubris dicranis, flore masculo nidulante.

D. scoparium et D. cristatum, *Wils. l. c.* p. 295.—D. scoparium, *Griff. Not.* p. 417; *Icon. Plant. Asiat.* ii. t. lxxxii. f. 3.

*Hab.* In Nepal, *Wallich*! in Kashmir, reg. temp. *T. T.*! (No. 52); in mont. Khasia. reg. temp., *J. D. H.* et *T. T.*! (No. 63); ad Bogapanee, *Griffith*!

Habitus *D. scoparii* et *D. pallidi*, neque primo visu aliter discernibile nisi foliis paululum angustioribus minus nitentibus. A speciebus affinibus tamen folii cellulis parietibus angustioribus haud interruptis formaque folii angustiore argutius serrulata distinctum.

7. D. reflexifolium, *C. Müller, Syn.* i. p. 282. (D. brevisetum ex parte, *Wils. l. c.* p. 295.)

*Hab.* In mont. Khasia, reg. temp., *J. D. H.* et *T. T.* (No. 53); in Assam, *Griffith*! in Nepal, *Wallich*!

A *D. breviseto* distinctissimum.

8. D. palustre, *Brid.* (D. scoparium ex parte, et D. palustre, *Wils. l. c.* p. 295.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 506); in Himalayæ boreali-occident. reg. temp., *T. T.* (No. 62).

9. D. fragile, *Hook.*, *Musc. Exot.* t. 134. (D. cuspidatum, *Griff. Not.* p. 416; *Icon. Plant. Asiat.* ii. t. xciv. f. iv.)

*Hab.* In Nepal, *Wallich*! in mont. Khasia, reg. subtrop. et temp., *J. D. H.* et *T. T.*! (No. 54, 54*b*); in pinetis Moflong, *Griffith*!

Specimina Griffithiana a Wallichianis differentiam nullam ostendunt, forsan Griffith ideam suam *D. fragilis* a figura Hookeri desumpsit; nam in icone citato folium caulinum nimis longum et angustum delineatum est.

10. D. Bergeri, *Bland.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim (inter *Cladonias*), *J. D. Hooker*!

11. D. enerve, *Thed.* (Campylopus crassinervis, *Wils. l. c.* p. 297.)
*Hab.* In Himalayæ orient. reg. alp., Sikkim (inter *Cladonias*), *J. D. Hooker*! (No. 66, 66 *b*, 66 *c*, 66 *d*, 66 *e*).
Invenitur etiam in Caucaso, Helvetia, Scandinavia, Britannia, et in America boreali-occidentali.

12. D. DECIPIENS (*Mitten*). Caule gracili radiculoso, foliis laxis patentibus supremis falcatis secundis anguste lanceolatis attenuatis, nervo lato tenui indistincto medio intensius colorato totam fere folii latitudinem occupante, marginibus involutis apice parce serrulatis, cellulis basi laxis alaribus paululum ventricosis laxis pallide fuscis.
D. cerviculatum et D. lubricum, *Wils. l. c.* pp. 296, 297.
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 87); in mont. Khasia, reg. subtrop., inter *D. fragile*, *J. H. D.* et *T. T.* (No. 87 *b*).
Primo adspectu *D. longifolio* non dissimile, sed gracilius. Folia quamvis in sectione transversali nervum latissimum exhibent e colore saturatiore in nervi medio evidentiore, quasi angusto-nervata.

** *Pedunculus flexuosus* (Campylopus).

13. D. NILGHIRIENSE (*Mitten*). Dioicum, *D. nivali* simillimum, caule non nodoso-interrupto, foliis e basi latiore subulatis setaceis, nervo inferne $\frac{3}{5}$ folii latitudinis occupante, cellulis basi angustis elongatis marginalibus tenerrimis alaribus paucis teneris hyalinis, perichætialibus internis convolutis, theca in pedunculo flexuoso ovali siccitate plicata, operculo subulato obliquo, peristomio dentibus rubris dicranis, calyptra basi nuda.
D. nivale ex parte, *C. Müller, Syn.* i. p. 393.—D. Perrottetii ex parte, *Mont.*
*Hab.* In mont. Nilghiri, *Perrottet, Gardner*! *Foulkes*!
*D. nivali* (Brid.) simillimum, sed notis datis distinctum. In specimine Borbonico *D. nivalis* folia e basi nervo $\frac{4}{6}$ folii latitudinis occupante parallela insensibiliter angustata.

14. D. albescens, *C. Müller, Bot. Zeit.* 1853, p. 36.
*Hab.* In mont. Nilghiri, *Schmid.*!

15. D. densum, *Schl.* (Campylopus fragilis, *Bryol. Europ.*)
*Hab.* In mont. Nilghiri, *Schmid.*!

16. D. nitidum (Campylopus), *Dozy et Molk., Musc. Archip. Ind.* t. xliii.
*Hab.* In Ceylon, *Maxwell*! *Gardner*! (No. 74). Etiam in Java, *Junghuhn*!

17. D. LATINERVE (*Mitten*). Dioicum, cæspitosum, caule humili erecto dichotomo, foliis patentibus lanceolatis rigidis concavis, nervo latissimo basi $\frac{3}{5}$ folii latitudinis superne totam occupante apice parce denticulato, cellulis basi elongatis teneris alaribus paucis pallidis, perichætialibus basi elongata latiori in tubulum convolutis subulatis acuminibus lævibus; theca in pedunculo elongato cygnicolli-arcuato elliptico-ovali siccitate plicata basi rugulosa, operculo conico subulato subrecto-rostrato, peristomio dentibus rubris dicranis annulo latiusculo, calyptra basi fimbriata.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 23, 26, 80, 87 *b*). In Nepal. orient., *J. D. Hooker* (No. 87 *d*). In mont. Nilghiri, *G. Thomson*! (No. 90 *b*). In Ceylon, *Gardner*! (No. 90).

Hujus speciei typum dant specimina sub No. 80 memorata; reliqua imperfecta sed proxime huic referenda. *D. Goughii* gracilius, nervo latiore et theca basi rugulosa. A *D. ericoide* foliis superne minus attenuatis parcius denticulatis et perichætialibus apicibus subintegerrimis distinctum. *D. Nilghiriense* structura foliorum simile, sed minus et calyptra fimbriata.

18. D. GRACILE (*Mitten*). Dioicum, cæspitosum, sericeum, caule dichotomo radiculis pallidis parce vestito, foliis erecto-patentibus lanceolatis longe attenuatis basi nervo $\frac{6}{8}$ folii latitudinis superne totam occupante concavis apice subintegerrimis, cellulis parvis angustis alaribus paucis pallidis, perichætialibus e basi lata convoluto-subulatis; theca in pedunculo arcuato ovali-cylindrica æquali siccitate plicata, operculo subulato recto-rostrato, peristomio dentibus rubris dicranis, calyptra basi fimbriata.

D. sericeum, *Wils. l. c.* p. 297; non *C. Mülleri.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.* (No. 69, 72).

*D. nitido* simile, sed gracilius, foliis nervo latiore, theca angustiore in pedunculo arcuato haud cygnicolli-flexo. A *D. latinervi* foliis magis attenuatis diversum.

19. D. pyriforme, *Schultz.* (D. turfaceum, *C. Müller, Syn.* i. p. 399.—D. pinetorum, *Griff. Not.* p. 419; *Icon. Plant. Asiat.* ii. t. xciv. f. iii.)

*Hab.* In mont. Khasia., Moflong (ad truncos pinorum), *Griffith*!

Theca in speciminibus Griffithianis plicata, quamvis ab auctore "estriatis" descripta.

20. D. GOUGHII (*Mitten*). Dioicum, dense cæspitosum, luteum, nitidum, caule dichotomo inferne fusco-radiculoso, foliis patenti-appressis lanceolato-subulatis concavis, nervo lato dimidium folii latitudinis occupante apice parce serrulato, cellulis firmis alaribus paucis pallidis, perichætialibus e basi latiore convoluto-subulatis; theca in pedunculo breviusculo cygnicolli-flexuoso ovali sub-æquali, operculo subulato oblique rostrato, peristomio rubro dentibus dicranis, calyptra basi nuda crenata.

Campylopus compactus, ex parte, *Wils. l. c.* p. 297.

*Hab.* In mont. Nilghiri, *Gough* ! *et Gardner* ! In Himalayæ reg. temp., Nepal. *Wallich* ! Sikkim, *J. D. H.* ! (No. 79 *b*). In mont. Khasia. reg. sub-trop. *J. D. H. et T. T.* ! (No. 86).

*D. denso* simile sed compactius, foliis firmioribus, basi aliter conformatis, et calyptra basi nuda. A *D. flagellifero* structura foliorum et cellularum alarium diversum.

21. D. WALKERI (*Mitten*). Dioicum, gracile, erectum, caule inferne fusco-radiculoso innovationibus tenuibus appressifoliis subjulaceis infra perichætium comosum orientibus ramoso, foliis caulinis erectis lanceolatis concavis, nervo basi tertiam partem folii latitudinis occupante apice tantum parce minute serrulato, cellulis basi elongatis laxis superne in oblongas transeuntibus alaribus teneris pallidis, perichætialibus e basi lata longe convoluta longe subulatis; theca in pedunculo elongato sicco et humido erecto flexuoso horizontali subpyriformi inæquali, siccitate plicata arcuata, ore obliquo, collo strumoso lævi, peristomio rubro, dentibus dicranis.

*Hab.* In Ceylon, *Walker* !

Habitu *D. comosi*, sed partibus omnibus minus, foliis cellulis alaribus teneris fragilibus. Theca basi strumosa, ore inæquali, et siccitate arcuata.

22. D. flagelliferum, *C. Müller*, *Bot. Zeit.* 1853, p. 35. (Campylopus Perrottetii ex parte, *Mont.*)

*Hab.* In mont. Nilghiri, *Perrottet* ! *Foulkes* ! *Schmid*; *Gough* !

23. D. reduncum, *Hornsch. et Reinw.*, *C. Muller*, *Synops.* i. p. 396.

*Hab.* In insula Ceylon, *Gardner* ! (No. 89).

24. D. ericoides, *Griff. Not.* p. 420.

*Hab.* In Nepal., *Wallich* ! In mont. Khasia., in sylvis Myrung, *Griffith* !

Primo adspectu *D. pyriformi* simillimum, structura autem *D. flagellifero* affinius, a quo theca basi aspera et calyptra fimbriata recedit. Folia perichætialia argute serrata.

25. D. involutum, *C. Müller*, *Bot. Zeit.* 1853, p. 34.

*Hab.* In mont. Nilghiri, *Schmid.*

26. D. caudatum, *C. Müller*, *Syn.* i. p. 401.

*Hab.* In mont. Nilghiri, *Perrottet et Gardner* !

27. D. SORDIDUM (*Wils. l. c.* p. 297). Caule erecto brevi, foliis lanceolatis subulatis patentibus nervo mediocri percurrente, apice parce serrulato, cellulis basi oblongis mox in elongatas transeuntibus, alaribus rubris totam baseos latitudinem occupantibus.

*Hab.* In Nepal. orient. reg. temp. inter specimina *Bryi teretiusculi*, *J. H. D.* ! (No. 31).

Species obscura; specimina imperfecta facie *D. uncinati*, sed structura foliorum aliena, probabiliter hujus loci.

28. D. SUBLUTEUM. Cæspitosum, robustum, luteum, nigrescens, caule dichotomo, foliis erecto-patentibus siccitate appressis imbricatis e basi subovato-oblonga derepente subulatis apice tantum minute denticulatis, nervo basi tertiam folii latitudinis in parte subulata totam occupante, cellulis basi firmis exterioribus angustissimis interioribus latioribus alaribus teneris pallidis.

*Hab.* In peninsula Malayana ad Moulmein, *Rev. D. Parish*! et ab India orientali absque loco, *Davies*! In Hb. Mitten.

Habitu *D. læto D. nigrescentique* simile, foliis autem e basi elongato-ovata oblongata subito angustatis subulatis diversum.

29. D. NIGRESCENS (*Mitten*). Dioicum, cæspitosum, habitu *D. exasperati*, foliis patentibus e basi elliptica lanceolatis, nervo $\frac{1}{3}$ folii latitudinis occupante apice hyalino minute serrulato, cellulis parvis quasi a nervo oblique divergentibus alaribus paucis pallidis, perichætiis aggregatis, foliis basi latioribus, theca in pedunculo brevi cygnicolli-flexo elliptica plicata, collo tuberculoso scabro, operculo subulato recto rostrato, peristomio dentibus angustis pallide rubris, annulo lato composito, calyptra basi fimbriata.

D. exasperatum, *Griff. Not.* p. 421; *Icon. Plant. Asiat.* t. xciv. f. 1.—D. Dozyanum, *Wils. l. c.* p. 298.

*Hab.* In Himalayæ orient. reg. temp. Sikkim, *J. D. H.*! (No. 73, 78, 92, 93). In mont. Khasia, ad rupes in locis apertis Churra Pungee, *Griffith*! et in regione temp. *J. D. H. et T. T.*! (No. 77). Behar ad Mont. Paras-Nath, reg. sub-trop., *J. D. H.* (No. 82). In Ceylon, *Gardner*! (No. 76, 76 *b*, 85).

*D. exasperato* paululum gracilius, polymorphum, nunc caulibus gracilibus, foliis appressis apice capituliferis, nunc caule interrupte folioso et interdum foliis per caulem homomallis.

30. D. LÆTUM (*Mitten*). Cæspitosum, caule radiculis tomentoso dichotomo elongato, foliis patentibus late lanceolatis subulatis apice marginibus dorsoque serrulatis, nervo tertiam folii latitudinis occupante, cellulis basi quadratis sensim in oblongas rotundatas oblique depressas transeuntibus, alaribus pallide fuscis non dilatatis.

D. No. 10, *Griff. Not.* p. 423.

*Hab.* In mont. Khasia, reg. temp., *J. D. H.*! (No. 84); Churra Pungee ad rupes humidas, et Nunklow ad pinorum truncos, *Griffith*!

"Pulchrum, dense cæspitosum, læte luteo-nitens," *Griffith, l. c.*—*D. nigrescenti* simillimum, sed structura foliorum baseos certe diversum.

31. D. THWAITESII (*Mitten*). Caule elongato prolifero ramoso, foliis comalibus patentibus innovationum appressis cuspidem formantibus lanceolatis attenuatis, marginibus dorsoque apicem versus serrulatis, nervo crasso dimidium folii latitudinis occupante summo apice hyalino, cellulis elongatis firmis conformibus, alaribus copiosis ventricosis intense rubro-fuscis.

*Hab.* In Ceylon, *Gardner*! *et Thwaites*!

*D. nigrescenti* habitu simile, differt structura foliorum autem et forma a cellulis alaribus, ubi latiora sunt, sensim angustatis.

32. D. RECURVUM. Dioicum, caule elato flexuoso ramoso, foliis patenti-recurvis lanceolatis, nervo dimidium folii latitudinis occupante, apice hyalino marginibusque superne parce denticulatis, cellulis minutis conformibus alaribus paucis externis hyalinis internis rubris, perichætiis aggregatis foliis brevioribus e basi late convoluta subulatis integerrimis; theca in pedunculo brevi cygnicolli-flexo ovali, collo tuberculoso scabro, peristomio dentibus rubris dicranis.

*Hab.* In mont. Nilghiri, *Gardner*! In Ceylon, *Fraser*! *et Thwaites*!

Formis majoribus *D. pilifero* (Turn.) simile, caulibus bi–triuncialibus innovationibus hic illic prodeuntibus, foliis in caulium apicibus statu sicco vel humido patenti-recurvis. A *D. nigrescente* foliis longioribus, nervo crassiore et thecarum ore majore recedit. A *D. Dozyano* et *D. atrovirente* cellulis folii a basi infima conformibus, haud fere ad medium e cellulis tenerioribus conformatum, diversum.

33. D. ERICETORUM (*Mitten*). Dioicum, dense cæspitosum, plus minus robustum, rigidum, erectum, parce dichotome ramosum, viride, fuscum, nigrescens, subopacum nitidumve, ramis sterilibus cuspidatis, fertilibus rosulatis, foliis caulinis late lanceolatis attenuatis, nervo basi $\frac{1}{2}$ folii latitudinis occupante dorso lamelloso apice in pilum hyalinum strictum serratum producto marginibus superne incurvis subintegerrimis, cellulis alaribus paucis parvis rubris fuscisve inde cellulis elongatis pallidis tenerrimis in superioribus minutis coloratis abrupte quasi linea a nervo ad marginem oblique adscendente transeuntibus, perichætiis aggregatis foliis basi ovali-elliptica convolutis teneris, nervo angusto longe excurrente, apice hyalinis denticulatis, theca in pedunculo breviusculo cygnicolli-flexuoso ad capsulæ collum scabro ovali æquali basi scabra siccitate plicata, operculo conico acuminato recto, peristomio dentibus angustis rubris dicranis, annulo composito, calyptra basi fimbriata.

Campylopus longipilus, *Brid. et auctorum*. (C. Dicranum clavatum, *R. Br.*, *Wils. l. c.* p. 298.—Dicranum Dozyanum, *C. Müller*, *Syn.* i. p. 385.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.* (No. 81). In mont. Nilghiri, *McIvor*! *et Gardner*! In Ceylon, *Gardner* (No. 75). In Assam, *Griffith*! et in Java, *Junghuhn*!

Etiam per Europam meridionalem in Lusitania! Hispania! Italia, necnon in Madeira insula! in ericetis inter *Polytricha*. In Gallia in sylva prope Fontainebleau! et prope Angers! unde habuit ipse Bridel.

Species hucusque auctoribus a Bridelio in errorem ductis cum *D. flexuoso* γ *pilifero* Turneri commutata, foliorum autem substantia supra descripta diversa. *D. piliferum* Turneri foliis longius subulatis basi cellulis alaribus fuscis firmis, deinde cellulis sensim abbreviatis firmis areolatis, et colore nigriore intensiore subnitente differt. *D. clavatum* R. Br.,

species australis, a *D. ericetorum* satis est diversum et potius *D. pilifero* comparandum.

34. D. tricolor, *C. Müller, Bot. Zeit.* 1853, p. 36.
*Hab.* In mont. Nilghiri, *Schmid.*
E descriptione a *D. ericetorum* vix diversum videtur.

35. D. erythrognaphalon, *C. Müller, Bot. Zeit.* 1853, p. 37.
*Hab.* In mont. Nilghiri, *Schmid.*

36. D. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 37.
*Hab.* In mont. Nilghiri, *Schmid.*

37. D. nodiflorum, *C. Müller, Bot. Zeit.* 1837, p. 38.
*Hab.* In mont. Nilghiri, *Schmid.*

38. D. uncinatum (Thysanomitrion), *Harvey.* (D. circinatum, *Wils. Bryol. Brit.*—Dicranodontium asperulum, *Wils. l. c.* p. 296.)
*Hab.* In Himalayæ reg. temp., Nepal. *Wallich*! Sikkim, *J. D. H.*! (No. 11 *b*, 18, 19, 81 *b*). In mont. Khasia, reg. trop. et temp., *J. D. H. et T. T.* (No. 64, 72 *b*, 77 *b*); et in rupibus humidis Surureem, *Griffith*! Etiam in montibus Helvetiæ, Scandinaviæ, et Britanniæ.

39. D. DICTICYON (*Mitten*). Dioicum, cæspitosum, caule dichotomo curvato, foliis falcatis secundis e basi sub-ovata subulatis, nervo crassiusculo subulam totam occupante superne, dorso subscabro, marginibus apicem versus minutissime serrulatis, cellulis folii in parte ovata distincte dimorphis, interioribus oblongis parallelogrammaticis pellucidis, marginalibus multo angustioribus limbum viridem formantibus, alaribus ventricosis laxissimis hyalinis, perichætialibus basi late convolutis, theca in pedunculo brevi sicco recto humido flexuoso ovali æquali, peristomio dentibus rubris dicranis.
D. uncinatum, *Wils. in Sched. l. c.* p. 296.
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 27, 27 *b*, 51, 51 *b*).
*D. uncinato* simile, sed robustius, foliis magis falcatis basi conspicue latioribus et cellulis distincte dimorphis, species generum *Calymperis* et *Syrrhopodontis* simulans.

40. D. didymodon, *Griff. Calcutta Journ. Nat. Hist.* ii. p. 499. (Didymodon dicranoides, *ejusd. Not.* p. 435; *Icon. Plant. Asiat.* ii. t. lxxxii. f. ii.—D. relaxum, *Wils. l. c.* p. 294.)
*Hab.* In mont. Khasia, reg. temp. et subtrop. *J. D. H. et T. T.*! (No. 65). In sylvis Myrung et ad truncos in pinetis Moflong, *Griffith*!
*D. uncinato* affine, sed structura foliorum cellularum ad folii basin, ubi cellulæ majores vix conspicuæ sunt, et peristomio pallido differt. Fructiferum non vidi.

41. D. CÆSPITOSUM, dioicum, cæspitosum, caule brevi dichotomo, foliis patentibus, apicalibus falcatis secundis, e basi latiuscula sensim angustatis, nervo crassiusculo partem superiorem totam occupante, vix scaberulis, basi cellulis majoribus sensim in angustiores transeuntibus alaribus magnis hyalinis, perichætialibus basi latis convolutis; theca in pedunculo breviusculo flexuoso ovali æquali, peristomio?...

Dicranodontium asperulum ex parte, *Wils. l. c.* p. 296.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 11).

*D. uncinato* minus, foliis a basi infima haud ovata sensim subulato-lanceolatis, cellulis interioribus altius in folium protractis.

42. D. ASPERULUM (*Mitten*). Dioicum? cæspitosum, caule decumbente dichotomo, foliis falcato-secundis e basi subovata subulatis, nervo latiusculo totam subulam fere occupante, marginibus dorsoque pulchre arcteque serrulatis, cellulis laxis pellucidis alaribus magnis hyalinis copiosis, perichætialibus basi latissimis vaginantibus cæterumque conformibus, theca in pedunculo elongato luteo tortili erecta ovali-cylindrica ætate plicata, operculo subulato rostrato recto, peristomii dentibus rubris dicranis.

Dicranodontium asperulum ex parte, *Wils. l. c.* p. 296.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 18, 29).

Habitu facieque *Leptotrichi heteromalli*, foliis pulchre serrulatis, cellulis basi laxis et alaribus magnis pallidis ab affinibus facile cernibile.

43. D. ATTENUATUM (*Mitten*). Dioicum, cæspitosum, caule furcato, foliis falcatis secundis e basi lanceolata longe tenuiter attenuatis concavis, nervo latissimo rigido totam fere partem superiorem et basi $\frac{3}{5}$ folii latitudinis occupante, integerrimis lævibus, cellulis basi in folii medio conspicuis marginalibus angustioribus alaribus teneris hyalinis, perichætialibus e basi lata convoluta subulatis; theca in pedunculo humido spiraliter flexuoso sicco recto ovali æquali, operculo subulato recto-rostrato, peristomii dentibus rubris dicranis, calyptra basi integra.

Dicranodontium attenuatum, *Wils. l. c.* p. 297.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 78 *b*).

A *D. asperulo* quocum crescit et habitu convenit, nervo crasso lato recedit, formis minoribus *D. longifolii* non dissimile, sed pedunculus flexuosus.

## 7. DIDYMODON, *Hook.*

Didymodon ex parte quoad D. flexifolium, Cynodontium ex parte, Weissia ex parte quoad W. serrulatam, Dichodontium, Rhabdoweissia et Amphidium (*Schimper, Corol.*), Angstrœmia et Trichostomum ex parte (*C. Müller, Synops.*), Ceratodon (*Brid.*).

Species quas sub hoc nomine enumero inter se adeo affines sunt ut in

genera plura characteribus fere nullis discreta non separavi. Nam inter Didymodontes europæos (*e. g.* D. flexifolium *Smith*, Weissiam serrulatam *Funk*, Cynodontium polycarpum et C. gracilescentem *Schimp.*, necnon Rhabdoweissias et species illas quas a Müllero inter Zygodontes a Schimpero pro genere Amphidio militant, tamen a Rhabdoweissiis nullo charactere nisi peristomii defectu diversas), differentias specificas tantum invenio. Ceratodon etiam a speciebus thecis striatis tantillum recedit; peristomii structura a Dicrano non diversa.

1. D. squarrosus, *Hook. Musc. Exot.* t. 150.

*Hab.* In Himalayæ reg. temp., Nepal. *Gardner*! *Wallich*! Sikkim, *J. D. Hooker*! (No. 102, 116). In mont. Khasia, reg. temp. et subtrop., *J. H. D. et T. T.*! (No. 123). In pinetis, Moflong, *Griffith*!

Huic proxime accedit *D. Neesii*, foliis paulo supra basin latioribus inde lanceolatis sensim acutis nervo carinatis, margine inferne recurvo apicem versus serrulato, perichætialibus interioribus elongatis convolutis sensim longe angustatis erectis, cæteroquin *D. squarroso* valde affine. *Hab.* In Java insula, *Nees ab Esenbeck in Herb. Hooker.*, sub nom. *D. squarrosi*. Foliis superne angustioribus et perichætialibus multo longioribus angustioribusque a *D. squarroso* diversus videtur.

2. D. gracilescens. (Dicranum, *Web. et Mohr.*—D. polycarpum, *Wils. l. c.* p. 295.)

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 106).

3. D. laxifolius. (Grimmia, *Hook. fil. in Hook. Icon. Plant. Rar.* t. 194, B.—G. flaccida, *Royle.*—Weissia serrulata, *Wils. l. c.* p. 291.)

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker* (No. 103, 104, 105, 107). Kumaon, *Strachey et Winterbottom*! *Royle*!

*D. serrulato* (Weissia *Funk*) simillimus, foliis autem laxioribus latioribus et theca firmiore diversus esse videtur.

4. D. DENTATUS (*Mitten*). Caule erecto innovante, foliis patenti-recurvis elliptico-lanceolatis margine inferne recurvis superne dentatis nervo sub apice evanido carinatis, cellulis basi oblongis pellucidis superne rotundatis obscuris dense papillosis.

Trichostomum dentatum ex parte, *Wils. l. c.* p. 299.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, ad corticem arborum vetustarum, *J. D. Hooker*! (No. 114, 267).

*D. flexifolio* maxime affinis, sed statura majore et foliis rigidioribus acutioribus discrepans.

5. D. CRENULATUS (*Mitten*). Monoicus, caule dichotomo, foliis laxis patentibus flaccidis ligulatis obtusis acutisve planiusculis e medio ad apicem crenulato-serratis, nervo sub summo apice evanido, cellulis inferne elongatis hyalinis superne subquadratis ob utriculum primordialem subobscuris, perichætialibus conformibus; theca in pedunculo

brevi gracili ovali ætate plicata, peristomii dentibus angustis rubris siccitate erectis apicibus incurvis.

Rhabdoweissia denticulata, *Wils. l. c.* p. 293.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 270).

*D. denticulato* (*Rhabdoweissia,* Bryol. Euror.) flaccidior, foliis duplo latioribus et cellulis majoribus distinctus.

6. D. stenocarpus. (Ceratodon, *B. & S.*)

*Hab.* In mont. Nilghiri, *Perrottet et Schmid*! in Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 191).

A *D. purpureo* vix, nisi colore luteo, diversus.

## 8. Holomitrium, *Brid., Hornsch.*

Sprucea dein Symblepharis, *Wils.*; Weissia ex parte, *auct.*, et Syrrhopodon ex parte, *C. Müller, Synops.*

1. H. Griffithianum (*Mitten*). Dioicum? cæspitosum, caule furcatim ramoso, foliis e basi erecta suboblonga patenti-incurvis lanceolatis apice acutatis, nervo crasso sub apice evanido, marginibus medio subincrassatis integerrimis, cellulis basi angustis elongatis superne minutis rotundatis ubique distinctis lævibus alaribus majoribus fuscis, perichætialibus interioribus corrugatis lanceolatis attenuatis convolutis, theca in pedunculo luteo ovali-cylindrica, operculo subulato, peristomio *H. perichætialis.*

Didymodon perichætialis, *Griff. Not.* p. 434; *Icon. Plant. Asiat.* pl. lxxx. f. 1.—Symblepharis densifolia, *Wils. l. c.* p. 292.

*Hab.* In mont. Khasia, reg. temp, ad rupes arboresque Myrung et Nunklow, *Griffith* ! Kollong, *J. D. H. et T. T.* ! Assam, *Simons* !

Formis gracilioribus *H. perichætialis* Brid. simile, sed caule magis elongato, seta breviore, foliis perichætialibus dimidio longioribus, foliis caulinis brevioribus apice obtusiusculis subcucullatis margine medio ut in speciebus affinibus obscure incrassatis, cellulis magis approximatis, unde folia obscuriora.

2. H. indicum (*Mitten*). Monoicum, caule erecto sæpe furcato, foliis patentibus incurvis e basi latiuscula sensim angustatis longiusculis, marginibus superne incurvis integerrimis, nervo percurrente, cellulis basi angustis elongatis superne rotundatis minutis distinctis alaribus copiosis fuscis ventricosis, perichætialibus intimis longioribus basi vaginantibus, theca in pedunculo longiusculo rubro erecta cylindrica, operculo brevi conico-rostrato, peristomii dentibus æquidistantibus lanceolatis rubris, flore masculo axillari lateralique gemmiformi.

Weissia indica ex parte, *Wils. l. c.* p. 292, et Leptotrichum tortuosum *ejusdem*, p. 321.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 28 *b.* ex parte, 42).

*H. crispulo* (*Weissia* Hedw.), facie habituque simile, sed partibus

omnibus major, pedunculo longiore rubro, theca duplo longiore cylindrica, operculo brevi, et foliis minus crispatis.

3. H. crispulum (Weissia, *Hedw.*).

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker* (No. 28 *b.* ex parte).

4. H. ALPINUM *Mitten*). Monoicum, caule furcato elongato, foliis patentibus subfalcatis e basi ovata subulatis firmis marginibus superne incurvis integerrimis, nervo crassiusculo percurrente, cellulis basi elongatis superne rotundatis vix distinctis alaribus magnis numerosis fuscis parum ventricosis, perichætialibus interioribus e basi lata ovalibus vaginantibus longe subulatis, theca in pedunculo rubro cylindrica, operculo subulato, peristomio?....

Weissia indica ex parte, *Wils. l. c.* p. 291.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 118).

*H. indico* simile, sed foliis e basi latiore subulatis firmioribus et operculo subulato diversum. Ab *H. crispulo* foliis firmioribus, theca cylindrica et statura duplo majore satis recedere videtur.

## § II. LEUCOBRYACEÆ, *C. Müller.*

### 1. LEUCOPHANES, *Brid.*

1. L. glaucus. (Syrrhopodon, *Schw.* t. 181.—L. cuspidatus, *C. Müller, Synops.* i. p. 83.)

*Hab.* In Nepal.? *Wallich*!

2. L. octoblepharoides, *Brid.* i. p. 763.

*Hab.* In Nepal. *Wallich*!

### 2. OCTOBLEPHARUM, *Hedw.*

1. O. albidum, *Hedw.*

*Hab.* In Himalayæ reg. trop., Nepal., *Wallich*! Sikkim, *J. D. Hooker* (No. 1280). In Concan, *Stocks*! et in Ceylon, *Gardner*! (No. 1281).

### 3. LEUCOBRYUM, *Hampe.*

1. L. javense. (Sphagnum *Brid.* i. p. 19.—L. falcatum, *C. Müller, Synops.* i. p. 79; *Dozy et Molk., Bryol. Javan.* t. xiv.)

*Hab.* In Himalayæ centralis reg. temp., Nepal. *J. D. Hooker* (No. 1270, 1271). In mont. Khasia, reg. temp., *J. D. H. et T. T.*! (No. 1276). In Ceylon, *Gardner*! (No. 1278).

Etiam in Java! Borneo! et Hong Kong!.

2. L. sanctum, *Hampe, Dozy et Molk., Bryol. Jav.* t. xii.

*Hab.* In Nepal. *Wallich.* (Etiam in insulis Java et Aneiteum.)

3. L. WIGHTII (*Mitten*). Dense cæspitosum, caule subsimplici, foliis laxe subspiraliter apice cuspidato imbricatis elliptico-lanceolatis superne convolutis acutis dorso dentatis transverse rugosis, cellulis marginalibus circiter triseriatis (in folii pagina).

*Hab.* In peninsula Madras, *Wight*!

*L. aduncо* simile, sed statura majore foliis superne angustioribus in caulium apicibus cuspidato-imbricatis, cellulis marginem versus nec minoribus nec abbreviatis.—*Dicranum glaucum*, Griff. Not. p. 415, cujus specimina non vidi, species plures probabiliter complectit.

4. L. aduncum, *Dozy et Molk. Bryol. Javan.* t. xi. (L. brachyphyllum, *Wils. l. c.* p. 293.)

*Hab.* In Himalayæ orient. reg. temp., Nepal. *J. D. Hooker*! In Penang, *Wallich*!

5. L. Nilghiriense, *C. Müller, Bot. Zeit.* 1854, p. 556. (L. vulgare, *Wils. l. c.* p. 293.)

*Hab.* In mont. Khasia, reg. temp., *J. D. H. et T. T.*! (No. 1277). In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (fragmentum).

Specimina sterilia forsan huic pertinentia.

6. L. Bowringii (*Mitten*). Cæspitosum, caule fasciculato ramoso, foliis patentibus e basi elliptica longe subulatis convolutis acutis, cellulis marginalibus 6–9-seriatis angustis elongatis apice denticulo uno alterove instructis dorso lævibus, perichætialibus basi longiore convolutis; theca in pedunculo elongato gracili ovali siccitate plicata basi strumosa ore obliquo.

L. angustifolium, *Wils. l. c.* p. 293.

*Hab.* In mont. Khasia, reg. temp., *J. H. D. et T. T.*! (No. 1272, 1275). In Ceylon, *Gardner*! (No. 1279). Etiam in Hong Kong, *Bowring*!

Habitu *L. gigantei*, sed statura *L. sancto* similius. A speciebus omnibus indicis foliis angustis statim dignoscitur.

## 4. Schistomitrium, *Dozy et Molk.*

1. S. Gardnerianum (*Mitten*). Conferte cæspitosum, caule erecto subsimplici, foliis dense imbricatis erecto-patentibus lanceolatis apice obtusiusculis apiculatis marginibus inflexis concavis e basi ad medium tenuiter hyalino marginatis, cellulis cæteris elongatis parallelogrammaticis conformibus, perichætialibus paululo latioribus, theca in pedunculo brevissimo immersa hemisphærica cyathiformi, operculo e basi conica longe subulato rostrato, peristomio nullo, calyptra longissime anguste subulata basi lacera laciniis breviter fimbriatis.

Leucophanes Gardnerianum, *C. Müller, Synops.*

*Hab.* In Nepal.? *Wallich*! In peninsula Malayana ad Moulmein, *Parish*! ad Madras, *Wight*! In mont. Khasia, reg. subtrop., *J. D. H. et T. T.*! No. 1274, specimen sterile, ut videtur, huc referendum.

Etiam in Hong Kong, *Bowring*! In Brasilia, *Gardner*! In Mexico ad Oaxaca in sylvis, alt. 3000 ped. cum *Octoblepharo albido* consociata, *Galeotti*!

Pulvinate cæspitosum. *Caules* vix unciales, in statu sterili vix a *Leucobryo glauco* primo visu distinguendæ. *Theca* parva inconspicua. *Calyptra* longissima thecam pedunculumque superans sed non ultra basin operculi protracta et cum illo decidens.

## § III. Trichostomaceæ.

**Pottiaceæ *C. Müller*, Phascaceæ, Ephemeræ ex parte, Weissiaceæ ex parte, Anœctangiaceæ, Pottiaceæ ex parte, et Encalyptaceæ *Schimp. Coroll.***

**Peristomium dentibus sæpe profunde fissis, cruribus elongatis angustis spiraliter tortis, in genere *Encalypta* duplex. Folia cellulis superioribus rotundatis quadratisve, inferioribus elongatis sæpe pellucidis.**

### 1. Weissia, *Hedw.*

**1. W. controversa, *Hedw.***

***Hab.* In Himalaya maxime occidentali ad Kashmir, *T. Thomson*! In Ceylon insula, *Gardner*! (No. 271, 272, 273).**

**2. W. edentula (*Mitten*). *W. controversæ* habitu, magnitudine florescentiaque simillima; theca in pedunculo gracili luteo ovali leptodermi macrostoma, operculo conico subulato-rostrato, peristomio nullo.**

***Hab.* Ad Madraspatanam in muris, *Wight*!**

**A *W. controversa* theca tenuiore, vestigio nullo peristomii, sicca evacuaque suburceolata diversum videtur. *W. linearifolia*, Hornsch., species Javanica et Sinensis a *W. controversa* vix recedens, non inter *Seligerias*, ubi a cl. C. Müller enumerata, locanda est.**

**3. W. recurvirostris.** (Bryum, *Dicks.*—Trichostomum rubellum, *C. Müller, Synops.* i. p. 581.)

***Hab.* In Tibet occid. reg. temp., *T. Thomson*! (No. 120, 144, 152, 182).**

### 2. Tortula, *Hedw.*, ex parte.

**Barbula et Trichostomum ex parte *auctorum*. Plantæ lutescentes. Folia crispa.**

**1. T. squarrosa, *Brid., de Not.***

***Hab.* In Himalayæ boreali-occident. reg. temp., *T. Thomson*! (No. 158).**

**2. T. Drummondii.** (Didymodon fragilis, *Hook. et Wils. in Drumm. Musc. Amer.* No. 127; Barbula, *Bryol. Europ.* Supp. t. iv.)

***Hab.* In Himalayæ orient. reg. alp., Sikkim inter cæspites *Oreadis Martianæ, J. D. Hooker*!**

**Nomen specificum fragile jam a beato Taylor alii speciei *Barbulæ* impositum.**

**3. T. duriuscula. Dioica, cæspitosa, lutea, senior fuscescens, caule dichotomo elongato, foliis patentibus siccitate crispatis e basi brevi latiore sensim lineari-lanceolatis apice acutatis, nervo crasso luteo excurrente, carinatis marginibus integerrimis papillis erosulis, cellulis basi elongatis, parallelogrammaticis pellucidis sensim in parvas rotundatas obscuras papillosas transeuntibus, perichætialibus basi lata ovata convoluta, theca in pedunculo elongato rubro cylindracea erecta cur-**

vatave, operculo subulato theca dimidio breviore, peristomii dentibus brevissimis *Didymodontis*, annulo simplici latiusculo.

Didymodon duriusculus, *Wils. l. c.* p. 299.

*Hab.* In Ceylon, *Gardner*.

Habitu facieque *T. tortuosæ* similis, sed paululum minor, pagina foliorum sæpe destructa, unde primo visu folia angustissima setacea apparent. *T. Bombayensi* etiam simillima, foliis autem cellulis minoribus firmioribus.

4. T. Bombayensis. (Trichostomum, *C. Müller, Syn.* ii. p. 628.)

*Hab.* Bombay, *Kegel*!

5. T. ANGUSTATA. Dioica, cæspitosa, lutea, caule elongato elato flexuoso dichotomo, foliis e basi erecta quadrata superne dilatata caulem amplexante squarroso-recurvis subulatis tenuiter angustatis longiusculis, nervo crasso luteo excurrente carinatis marginibus integerrimis, cellulis basi elongatis parallelogrammaticis pellucidis sensim in parvas obscuras fere læves transeuntibus.

*Hab.* In Ceylon, *Gardner*! (No. 134).

*T. duriusculæ* similis, sed foliis siccitate minus incurvo-crispatis angustioribus et basi amplexante statim dignoscitur.

6. T. anomala. (Barbula, *Bryol. Europ.*)

*Hab.* In Himalaya boreali-occident., *Royle*! et in reg. temp., *T. Thomson* (No. 138, 139, 140, 141, 142, 183). Kumaon, *Strachey et Winterbottom*!

Forsan a *Trichostomo corniculato*, Schw. t. 118, non diversa.

7. T. longifolia. (Barbula, *Griff. Not.* p. 410; *Icon. Plant. Asiat.* ii. t. lxxix. f. 11.)

*Hab.* In mont. Khasia, ad Moflong et Bogapanee, *McClelland*.

Ex icone *T. cylindricæ* affinis.

8. T. cylindrica. (Weissia, *Bruch in Bryol. Germ.*—Trichostomum, *C. Müller, Syn.* i. p. 586.—Didymodon longifolius, *Griff. Not.* p. 433; *Icon. Plant. Asiat.* ii. t. lxxx. f. iv.)

*Hab.* In Himalayæ reg. temp., Nepal. *Wallich*! *et J. D. Hooker* (No. 136 *c*). Sikkim, *J. D. Hooker*! (No. 115, 149). In Ceylon, *Gardner*! in mont. Khasia., "Ripæ Surureem," *Griffith*!

9. T. orthodonta, *C. Müller, Bot. Zeit.* 1853, p. 57.

*Hab.* In mont. Nilghiri, *Schmid*! *Gough*! In Ceylon ins., *Walker*!

10. T. STENOPHYLLA (*Mitten*). Dioica, cæspitosa, flavescens, caule innovationibus ramoso gracili humili, foliis e basi erecta patentibus incurvis siccitate cirrhatis lineari-lanceolatis tenuiter angustatis fragillimis, nervo luteo percurrente carinatis marginibus ob papillas prominulas crenulatis, cellulis basi elongatis pellucidis parallelogrammaticis superne rotundatis minute papillosis, perichætialibus caulinis similibus,

theca in pedunculo pallido luteo cylindrica erecta leptodermi ætate valde plicata, operculo conico subulato thecam dimidiam æquante, peristomii dentibus brevibus aurantiacis structura iis *T. cylindricæ* similibus, annulo nullo.

*Hab.* In Himalayæ orient. reg. alp., Sikkim in arborum cortice, *J. D. Hooker* ! (No. 159). In mont. Nilghiri, *Foulkes* !

*T. orthodontæ* affinis, sed minor, foliis magis crispatis fragilibus, cellulis minus opacis et theca leptodermi. A *T. cylindrica* foliis angustioribus basi erectis cauli appressis pallidis et statura minore differt.

11. T. KHASIANA (*Mitten*). Caule erecto, foliis patentibus siccitate tortis e basi suborbiculari erecta subito subulato- longe lineari-lanceolatis acutis nervo crassiusculo excurrente carinatis cellulis basi pellucidis luteis parallelogrammaticis superioribus minoribus subobscuris papillosis.

*Hab.* In mont. Khasia, reg. subtrop., inter *Plagiochasma cordatum*, *J. D. Hooker et T. Thomson* !

*T. orthodontæ* similis, tamen foliis tortis non incurvis nec crispatis et basi latiore suborbiculari diversa. Color in foliis superioribus luteus, in senioribus nigrescens.

12. T. AMPLEXIFOLIA. Dioica, cæspitosa, caule humili simpliciusculo, foliis e basi erecta appressa superne dilatata caulem amplexante sensim lanceolatis patentibus paululum recurvis, apice obtusiusculo nervo flavo excurrente mucronatis carinatis marginibus integerrimis nullibi recurvis, cellulis basi pellucidis oblongis parallelogrammaticis sensim in minutas quadrato-rotundatas obscuras vix distinctas transeuntibus, perichætialibus late lanceolatis erectioribus inferne laxioribus amplexantibus superne acutioribus, theca in pedunculo aurantiaco erecta ovali-cylindrica, peristomio longiusculo rubro torto.

*Hab.* In Himalayæ occident. reg. temp., Kumaon., *Strachey et Winterbottom* !

*T. unguiculatæ* primo adspectu omnino similis, foliis autem e basi caulem amplexante et marginibus non recurvis statim dignoscitur. Cellulæ foliorum iis *T. ungulatæ* paululum minores et obscuriores sunt.

13. T. flavescens, *Hook. et Grev.*

*Hab.* In Nepal. *Wallich* !

*T. unguiculatæ* maxime similis, sed folia basi latiora. A *Barbula fallaci* longe aliena et in temporibus nostris ad eam non comparanda.

14. T. GREGARIA (*Mitten*). Dioica, cæspitosa, humilis, caule subsimplici sordide viridi lutescente inferne fuscescente, foliis erecto-patentibus siccitate tortis spiraliterque cauli incurvatis late ovato-lanceolatis obtusis apice subcucullatis nervo crasso luteo apice dorso paulisper scabro carinatis et in apiculum brevem excurrente marginibus integerrimis inferne recurvis, cellulis baseos in folio medio ad nervum paucis elongatis luteis pellucidis reliquis parvis quadrato-rotundis subobscuris

utrinque papillosis, perichætialibus erectis basi oblongis convolutis apice acuminatis, theca in pedunculo intense rubro cylindrica erecta, operculo subæquilongo, peristomio operculi longitudinis rubro.

T. apiculata, *Wils. l. c.* p. 322.—Trichostomum brachyphyllum, *ejusd. l. c.* p. 321.

*Hab.* In Nepaliæ orient. reg. temp., *J. D. Hooker*! (No. 166). In Tibetiæ reg. temp., *T. Thomson*! (No. 126).

*T. unguiculatæ*, formæque ejus *T. apiculatæ*, habitu facieque persimillima, sed structura foliorum supra memorata certe diversa. A *T. flavescente* foliis latioribus, marginibus non reflexis, cellulis obscurioribus et perichætialibus latioribus satis diversa videtur.

15. T. indica, *Hook. Musc. Exot.* t. 135.

*Hab.* In Nepal. *Wallich*! Ad Madraspatanam, *Wight*! In Ceylon, "Ripæ prope Jumalpore Bengaliæ inferioris," *Griffith* (No. 162).

Hujus speciei ex herb. Willdenow specimen sub nomine *Trichostomi orientalis* accepit cl. Hooker!

16. T. angustifolia, *Hook. et Grev., Brewster's Edinb. Journ.* i. p. 299, t. 12.

*Hab.* In Nepal. *Wallich*!

Species ut videtur a *T. indica* foliis angustioribus et theca firmiore diversa. Nervum folii dorso eodem modo aspero ut in *T. indica*.

17. T. CYLINDROTHECA. Dioica, cæspitosa, luteo-viridis, caule dichotomo breviusculo, foliis e basi brevi erecta late lanceolatis acuminatis, nervo concolori in mucronem excurrente, marginibus integerrimis, cellulis a basi in partem erectam laxis pellucidis parallelogrammaticis sensim in minutas obscuras virides transeuntibus, perichætialibus conformibus, theca in pedunculo breviusculo cylindrica longiuscula erecta arcuatave, collo sensim attenuato.

Trichostomum Bombayense, *Wils. l. c.* p. 322.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. H.*! (No. 164 *b*).

Habitus *T. Northianæ*, sed minor.

## 3. ANŒCTANGIUM, *Hedw.*

1. A. ROYLEI (*Mitten*). Dioicum, cæspitosum, læte virens, foliis patentibus lineari-lanceolatis sensim acutis basi vix dilatatis nervo crassiusculo dorso lævi excurrente carinatis, cellulis superioribus parvis rotundatis inferioribus basin versus in folio medio ad nervum elongatis oblongis omnibus distinctis lævibus pellucidis, perichætialibus parvis orbiculari-ovatis acuminatis, theca in pedunculo breviusculo obovata, operculo subulato theca breviore.

*Hab.* In Himalaya boreali-occident., *Royle*!

Caulis vix uncialis fastigiatim ramosus; foliis statu sicco compacte incurvis interdum uno latere dejectis læte viridibus, inferioribus pallide

fuscis. *A. Hornschuchiano* ob folia densiora paululum crassiora, et primo adspectu *Hymenostylio xanthocarpo* simillimum.

2. A. CLARUM (*Mitten*). Dioicum, cæspitosum, læte virens, subluteum, inferne fuscescens, caule dichotomo, foliis erecto-patentibus lanceolatis acutis nervo concolori carinatis integerrimis, cellulis minutis rotundatis omnibus distinctis lævibus, perichætialibus imbricatis ovatis acuminatis, theca in pedunculo gracili ovali erecta, operculo planiusculo rostro tenui capsulam dimidiam longitudine æquante.

A. compactum, var. *Wils. l. c.* p. 326.

*Hab.* Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 202, 203).

Facies primo visu omnino *A. compacti*, foliis tamen pagina ubique pellucida molliore facile cernibile.

3. A. THOMSONI (*Mitten*). Dioicum, cæspitosum, viride, lutescens, caule dichotomo, foliis siccitate crispatis humidis patentibus e basi angustiore vel interdum latiore ovata lanceolatis acutis nervo concolori carinatis integerrimis, cellulis basi oblongo-ovalibus sensim in minutas rotundatas superne obscuras papillosas transeuntibus, perichætialibus elliptico-oblongis acuminatis imbricatis, theca in pedunculo mediocri ovali erecta, ore amplo.

A. crispulum, *Wils. l. c.* p. 325. Tortula allied to T. paludosa *ejusd. l. c.* p. 322.

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 197, 200, 201, 205); *Royle*! *T. Thomson* (No. 153, 156, 199). Kumaon, *Strachey et Winterbottom*!

Ab *A. compacto* statura paululum robustiore foliis longioribus tortuosis et structura recedit.

4. A. STRACHEYANUM (*Mitten*). Dioicum, cæspitosum, luteum, fuscescens, caule gracili dichotomo, foliis patentibus incurvis lanceolatis acutis nervo concolori dorso papillis eroso-carinatis integerrimis, cellulis minutis vix papillosis subobscuris, perichætialibus imbricatis ovatis acuminatis, theca in pedunculo gracili ovali, operculo subulato æquilongo.—A. tortifolium, *Wils. l. c.* p. 326.

*Hab.* In Himalayæ boreali-occident. reg. temp., *T. Thomson* (No. 207). Kumaon, *Strachey et Winterbottom*!

*A. compacto* minus, foliis dimidio angustioribus siccitate subspiraliter tortis, cellulis superioribus minus obscuris et nervo dorso asperulo.

5. A. CRASSINERVIUM (*Mitten*). Cæspitosum, humile, viride, caule dichotomo, foliis patentibus apice patulo-recurvis ovato-lanceolatis obtusis nervo crassiusculo carinatis integerrimis, cellulis basi majoribus parallelogrammaticis superioribus minutis subobscuris, perichætialibus imbricatis ovatis.

A. pusillum, *Wils. l. c.* p. 325.

*Hab.* In Tibet occid. reg. temp., *T. Thomson*! (No. 127).

A reliquis speciebus indicis foliis obtusis nervo crasso carinatis facile cernendum. A *Zygodonte* (*Anœctangio*) *pusillo* C. Mülleri longe diversum.

6. A. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 60.

*Hab.* In mont. Nilghiri, *Schmid.*

E. descriptione potius ad *Didymodontes* pertinere videtur.

## 4. HYMENOSTYLIUM, *Brid.*

Gymnostomum ex parte, *Hedw. et auct.*; Gymnostomum et Eucladium, *Br. & Sch. Bryol. Europ.*; Pottia ex parte, *C. Müller, Synops.*

1. H. xanthocarpum, *Brid.* (Gymnostomum, *Hook. Musc. Exot.* t. 153.)

*Hab.* In Nepal. *Gardner*!

2. H. AURANTIACUM (*Mitten*). Dioicum, cæspitosum, caule dichotomo, foliis patentibus lanceolatis acutis nervo dorso papilloso excurrente carinatis integerrimis, cellulis baseos oblongis sensim in minutas rotundatas transeuntibus, perichætialibus longioribus, theca in pedunculo luteo aurantiaca globoso-ovata, operculo subulato theca longiore.

Gymnostomum xanthocarpum, *Wils. l. c.* p. 291.

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 190). In Kumaon, *Strachey et Winterbottom.* In Tibet occid. reg. temp., *T. Thomson*! (No. 126*b*, 127 *b*, 132, 188.)

Habitus *H. xanthocarpi*, sed paululum gracilius, foliis dimidio augustioribus, cellulis basi oblongis vix parallelogrammaticis, nervo dorso minute papilloso scabro et operculo longiore diversum videtur. Ab *H. curvirostro* foliis magis linearibus apice subacutatis recedit.

3. H. COMMUTATUM (*Mitten*). Dioicum, habitu *H. curvirostri*, foliis e basi suboblonga lanceolatis angustatis nervo sub apice evanido carinatis, cellulis fere omnibus elongatis pellucidis, perichætialibus conformibus, theca *H. curvirostri.*

*Hab.* In Himalaya boreali-occident., *Royle*! In Tibet occid. reg. temp., in valle fluvii Indus, *T. Thomson*! (No. 128, 130). Etiam in Helvetia, *Schleicher*! et in Britannia.

Species quamvis forma cellularum in folii parte superiore elongata non rotundata satis facile ab *H. curvirostro* cernenda, et verisimiliter ad speciem inter illas ab Hornschuchio descriptas propius referenda, tamen foliorum structura non descripta, distinctionem veram frustra quæsivi.

4. H. curvirostrum. (Gymnostomum, *Hedw., Br. & Sch., Bryol. Europ.* t. vii!—G. atroviride, *Griff. Not.* p. 393; *Icon. Plant. Asiat.* ii. t. xcv. f. 1.)

*Hab.* In Himalayæ reg. temperata, *Wallich*! *et Royle*! Kurmaon, *Strachey et Winterbottom*! In Tibet occid. reg. temp. et alp., *T. Thomson*! (No. 129, 131, 133). In mont. Khasian. ad rupes madidas ad Moosmai, *Griffith*!

5. H. calcareum. (Gymnostomum, *Hsch.*).
*Hab.* In Tibet occid. reg. temp. ad Rondu inter cæspites *Tortulæ anomalæ, T. Thomson*!

6. H. vernicosum. (Gymnostomum, *Hook.*)
*Hab.* In Nepal, *Wallich*!

? 7. H. inconspicuum, *Griff. Not.* p. 394.
*Hab.* In mont. Khasian. in rupibus madidis cum *Dicranis* quibusdam, *Griffith.*
Species forsan hujus generis mihi non visa.

## 5. Barbula, *Hedw.*, ex parte.

**Tortula, Trichostomum, Didymodon et Gymnostomum ex parte, *auctorum*. *Folia* rubiginosa vel fusca.**

1. B. rufescens. (Gymnostomum, *Hook. Icon. Plant. Rar.* t. 17.—G. recurvum, *Griff. Not.* p. 397; *Icon. Plant. Asiat.* ii. t. xcii. f. 2.—Grimmia? remota, *Wils. l. c.* p. 323.)
*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 176, 178). In mont. Khasian. reg. temp. *J. D. H. et T. T.*! (No. 163, 264, 265); et ad Boga Panee, *Griffith*!
Icon in 'Icon. Plant. Rar.' Hookeri ad naturam quoad sectionem transversalem et areolationem vix quadrat. Species omnino ad hunc locum pertinens et *B. gracili* affinibusque simillima.

2. B. vinealis, *Brid.* (Tortula vinealis var.? *Wils. l. c.* p. 322.)
*Hab.* In Nepal, *Wallich*. Kumaon reg. temp., *T. Thomson*! (No. 173).

3. B. obscura (*Mitten*). Dioica, cæspitosa, caule elongato innovando ramoso, foliis e basi subqnadrata superne paululum dilatata erecta cauli appressa patentibus lanceolatis strictis nervo crassiusculo excurrente carinatis marginibus e basi ad medium reflexis, cellulis basi pellucidis elongatis parallelogrammaticis superne sensim in minutas obscuras papillosas transeuntibus, perichætialibus e basi late ovali vaginante subulato-lanceolatis longiusculis, theca in pedunculo rubro cylindrica.
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*!
*B. fallax* et *B. vinealis* colore statura habituque valde affines, sed structura folii baseos certe alienæ.

4. B. constricta (*Mitten*). Dioica, cæspitosa, caule elongato geniculato innovando ramoso, foliis laxis patentibus e basi ad insertionem constricta subovata concava sensim lanceolato-augustatis nervo crassiusculo fusco excurrente carinatis margine a basi ad medium recurvo, cellulis inferne rotundato-quadratis pellucidis superne in minores subobscuras transeuntibus, perichætialibus erecto-patentibus e basi

lata subovata amplexante sensim attenuatis, theca in pedunculo rubro cylindrica subovata, peristomio rubro.

Tortula vinealis, var., *Wils. l. c.* p. 322.

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim et Nepal, *J. D. Hooker* (No. 170).

Species formis gracilioribus *B. fallacis* et *B. vinealis* oculo nudo omnibus partibus conveniens, sed foliis basi infima constrictis, cellulis ob latitudinem parietum distinctioribus.

5. B. HASTATA (*Mitten*). Dioica, cæspitosa, caule innovationibus gracilibus brevifoliosis flagelliformibus ramosis, foliis patentibus patulisque inferioribus ramisque hastatis superioribus ovatis acuminatis ovato-lanceolatisque nervo crassiusculo fusco excurrente carinatis margine fere ad apicem reflexo, cellulis parvis rotundatis subobscuris conformibus, perichætialibus erectis oblongo-ovatis convolutaceis brevi-apiculatis, theca in pedunculo pro planta crassiusculo intense fusco ovali erecta, peristomio dentibus rubris ad basin liberis tortis.

Tortula comosa? *Wils. l. c.* p. 322.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 185).

Habitu coloreque formis gracilioribus *B. fallacis* similis, foliis autem perichætialibus brevi-apiculatis erectis diversa.

6. B. RECURVIFOLIA (*Mitten*). Cæspitosa, rubiginosa, caule elongato sæpe elato ramoso, foliis patulis recurvis e basi ovata sensim lanceolatis apice sæpe hyalinis nervo fusco percurrente carinatis dorso minute tuberculoso marginibus basi ad medium reflexis integerrimis, cellulis basi oblongis parvis superne minutis rotundatis distinctis fere lævibus.

Tortula fallax *et* Schistidium apocarpum, *Wils. l. c.* p. 322, 323.

*Hab.* In Tibet. occid. reg. alp., ad summitatem montis Hera La, alt. 18,700 ped., *Strachey*! et inter specimina *Cetrariæ nivalis*, alt. 10,000–12,000 ped., reg. temp., *T. Thomson*! (No. 143). In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 168). Etiam in alpinis montium Pyrenæorum, *Spruce* (*Musc. Pyren.* No. 185) (Tort. vinealis, var. nivalis); et in Hibernia, *Moore*!

A *B. vineali* foliis magnopere recurvis, apicibus latioribus hyalinis, et nervo angustiore dorsoque tuberculis scabro, præterea statura altiore refugiens.

7. B. ASPERIFOLIA (*Mitten*). Rubiginosa, caule ramoso, foliis patentibus recurvis e basi oblongo-ovali lanceolatis acutis nervo fusco percurrente dorso ob papillas grossas scabro carinatis margine integerrimo fere toto reflexo, cellulis basi elongatis parallelogrammaticis superne parvis rotundatis ubique papillis grossiusculis asperis.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, inter cæspites *Oreadis Martianæ*, *J. D. Hooker*!

*Caulis* uncialis ferrugineo-fuscus. *Folia* siccitate incurva appressa, humida recurva. *B. fallaci* et *B. vineali* similis, sed foliis basi magis ovalibus grosse papillosis facile distinguenda.

8. **B. ALBICUSPIS** (*Mitten*). **Intense rubiginosa, caule erecto ramoso, foliis patentibus recurvis e basi oblongo-ovali lanceolatis apicibus hyalinis argute denticulatis nervo fusco dorso minute scabro percurrente carinatis marginibus totis fere reflexis apice excepto integerrimis, cellulis basi parvis oblongo-rotundatis superne minutis fere lævibus.**

*Hab.* In Himalayæ orient. reg. alp., Sikkim, ad Donkia Pass, alt. 18,000 ped., *J. D. Hooker*!

*B. asperifoliæ* habitu magnitudine et colore similis, foliis autem apiculo hyalino argute serrulato et cellulis ad folii basin minoribus certe recedit.

9. **B. SUBPELLUCIDA** (*Mitten*). **Dioica, cæspitosa, caule elongato simplici, foliis erecto-patentibus lanceolatis incurvis strictisve concavis, apice in inferioribus obtusiusculo subcucullato, in superioribus acutis, nervo concolori ætate fusco dorso scabro sub summo apice evanido carinatis, marginibus recurvis apice nonnunquam suberosis, cellulis superioribus rotundatis parvis basi elongatis parallelogrammaticis omnibus distinctis subpellucide viridibus, perichætialibus conformibus, theca in pedunculo elongato flavo ovali-cylindrica, operculo subulato theca breviore, peristomio elongato rubro torto.**

*Hab.* In Himalaya boreali-occident., *Royle*! In Tibet. occid. reg. temp., *T. Thomson*! (No. 121).

*Caulis* uncialis biuncialisve, formis robustioribus *B. fallacis* similis. *Folia* viridia.

10. B. tophacea, *Mitt.* (Trichostomum, *Bridel.*—Ceratodon purpureus vel C. stenocarpus, *Wils. l. c.* p. 299.)

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 101, 155).

11. B. comosa, *Dozy et Molk. Musci. Archip. Ind.* fasc. ii. t. xvii. (Trichostomum tortile, *Wils. l. c.* p. 321.—B. arcuata, *Griff. Not.* p. 411; *Icon. Plant. Asiat.* ii. t. lxxix. f. 1.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 165). Ad Singapore, et in mont. Khasian. ad Boga Panee, *Griffith.*

12. **B. GRACILENTA** (*Mitten*). **Dioica, cæspitosa, caule innovationibus ramoso gracili humili, foliis patentibus e basi hastata lanceolatis iis caulis sterilis ovatis apice latiusculis obtusiusculis acutatis nervo excurrente carinatis margine a basi ad medium reflexo, cellulis parvis omnibus conformibus distinctis, perichætialibus erectis e basi latiore elongata amplexante lanceolatis, theca in pedunculo gracili ovali.**

Tortula flavescens, var., *Wils. l. c.* p. 322.

*Hab.* In Himalayæ boreali-occident. reg. temp., *T. Thomson*! (No. 189).

*Stirps* parva gracilis *B. comosa* gracilior, foliis brevioribus et in ramis non fructificantibus obtusiusculis. *Color* subluteus. A *T. flavescente* foliis in caule fertili a basi lata sensim angustatis haud obtusatis differt.

13. B. OVATA (*Mitten*). Dioica, cæspitosa, caule innovationibus ramoso, foliis inferioribus pallidis superioribus ferrugineis patentibus incurvis ovatis acutis apiculove obtusiusculo terminatis marginibus recurvis, nervo tenui in apiculum excurrente, cellulis quadratis conformibus minute papillosis.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 184).

A *B. trifaria* (*Trichostomum* auctorum) statura conveniente et forma foliorum subsimili, foliis magis incurvis apiculo parvo obtuso et areolatione diversa.

14. B. NIGRESCENS (*Mitten*). Dioica, cæspitosa, humilis, lutea, mox nigrescens, caule innovando ramoso, foliis patentibus ovatis apicibus obtusiusculis paululum incurvis nervo fusco in apicem evanido carinatis margine inferne reflexo superne fere ad apicem recurvo, cellulis minutis subobscuris conformibus, perichætialibus longioribus erectis ovato-lanceolatis, theca in pedunculo intense aurantiaco-fusco cylindracea, operculo subulato thecam dimidiam longitudine æquante, peristomio dentibus ad basin discretis aurantiacis, annulo latiusculo.

Tortula fallax, *Wils. l. c.* p. 322.

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 169). Kumaon, *Strachey et Winterbottom*!

Primo adspectu *Tortulæ unguiculatæ* similis, sed structura formaque foliorum *B. fallaci* et ejus affinibus consocianda, a quibus foliorum apicibus obtusiusculis annuloque recedit.

15. B. CONFERTIFOLIA (*Mitten*). Humilis, cæspitosa, fusca, caule simplici, foliis patentibus ovatis obtusis, nervo crasso fusco sub summo apice evanido, margine ubique reflexo, cellulis basi parvis quadratis subpellucidis superioribus minoribus obscuris minute papillosis.

*Hab.* In Nepal (*Bryo Weisiæ* consociata), *Wallich*!

*B. Schimperi* (*Trichostomum*, Mont.) affinis, et, nisi statura paululum robustiore et areolatione in folii parte superiore obscuriore, vix distinguenda. *Folia* siccitate minus torta.

## 6. DESMATODON, *Brid.*, ex parte.

Gymnostomum ex parte, Pottia, Hyophila, Trichostomum ex parte, Tortula et Barbula ex parte, *auct.*

*Peristomium* hujus gregis statu perfecte evoluto a *Syntrichia* non recedit, habitus autem et forma et structura foliorum in illam vix transitionem directam indicant.—Peristomium *Pottiarum* ut in *P. cavifolia* et in *P. minutula* invenitur, cujus formæ peristomatæ a bryologis vel pro *Anacalypta* vel pro *Desmatodonte* nuncupantur, inter quas tamen nulla distinctio adesse videtur in speciminibus pluribus in pluribus statibus observatis; quare gradus peristomii evolutionis nec pro distinctione generica neque pro discrimine tuto specifico servandus putetur. Observationis dignum est quod cellulæ operculorum specierum eperisto-

matarum ut plurimum spiraliter dispositæ sunt, unde si peristomium adfuerit, necesse est ut torqueretur.

1. D. inermis. (Tortula, *Mont.*)
*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 175 *a*, *b*, *c*).

2. D. mucronifolius. (Barbula, *Schw.* t. 34.—Tortula rosulata, *Wils. l. c.* p. 322.)
*Hab.* In Tibet. occid. reg. alp., *T. Thomson*! (No. 257) (*Hypno glaciali* consociatus).

3. D. latifolius, *Brid.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 117, 119).

4. D. Laureri, *Bryol. Europ.*
*Hab.* In Tibet. occid. reg. temp. et alp., *T. Thomson*! (No. 278). In Himalaya occidentali, Kumaon, *Strachey et Winterbottom*!

5. D. cernuus, *Hüb.*
*Hab.* In Tibet. occid. reg. alp., *T. Thomson*! (No. 186).

6. D. LONGIROSTRIS (*Mitten.*—Gymnostomum, Hymenostylium longirostrum, *Griff. Not.* p. 395; *Icon. Plant. Asiat.* ii. t. xcv. f. iii.). Caule simplici humili gracili, foliis laxis patentibus inferioribus e basi oblonga erecta ligulari late lanceolatis acutis superioribus acuminatis nervo excurrente mucronatis marginibus undulato-incurvis integerrimis, cellulis in parte erecta elongatis pellucidis superioribus parvis subobscuris luteo-viridibus sublævibus, perichætialibus conformibus, theca in pedunculo brevi gracillimo pallido ovali macrostoma leptodermi, operculo subulato longe rostrato.
*Hab.* In mont. Khasian., ad lignum putridum, *Griffith*!
*Caulis* semuncialis. *Folia* circiter linearia siccatione incurva crispataque. *Pedunculus* bilinearis gracillimus. *Theca* parva pallide fusca, ore intensiore colorato.
Species distinctissima, cujus specimina paucissima vidi. Ab *Hymenostyliis* valde diversum.

7. D. RECURVUS (*Mitten*). Dioicus? cæspitosus, fuscescens, caule elongato subsimplici, foliis patentibus inferioribus spathulatis obtusiusculis serrulatis superioribus lineari- late lanceolatis acuminatis subintegerrimis integerrimisve nervo fusco in cuspidem excurrente leviter carinatis, marginibus apice incurvis, cellulis in basi erecta media ad nervum tenerrimis hyalinis fugacibus elongato-oblongis sensim in minores quadrato-rotundatas distinctas papillosas transeuntibus, theca in pedunculo breviusculo rubescente ovali-cylindrica erecta, operculo subulato recto obliquove obtuso theca subtriplo breviore.
Gymnostomum recurvum, *Griff. Not.* p. 397; *Icon. Plant. Asiat.* ii.

t. xcii. f. 11; errore typographico *G. longirostro* ad pedem tabulæ adscriptum.—Tortula cacuminata, *Wils. l. c.* p. 322.

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*!

Species distinctissima, cujus caules steriles tantum vidi, altitudinis semi-sesquiuncialis, statu sicco foliis laxe appressis nec tortis nec incurvis, ochraceo-fuscis. Specimina Griffithiana non examinavi; sed icon et descriptio satis conveniunt.

8. D. Wallichii (*Mitten*). Dioicus, cæspitosus, rubiginosus, caule brevi elongatove sæpe innovante, foliis patentibus ovato-lanceolatis elongatisve acutis nervo in mucronem excurrente carinatis, margine a basi ad medium reflexo apicem versus argute serrato, cellulis basi elongatis pellucidis superne minutis obscuris papillosis, perichætialibus e basi ovali angustatis lanceolatis apice serratis, theca in pedunculo gracili erecta cylindrica subinæquali, operculo conico subulato thecæ tertiam partem longitudine æquante, peristomio brevi vix torto dentibus ad basin liberis, annulo simplici.

Trichostomum dentatum, ex parte, *Wils. l. c.* p. 299.

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 167). In Nepal, *Wallich*! Himalaya boreali-occident., *T. Thomson*! (No. 137). Kumaon, *Strachey et Winterbottom*!

*D. serrulato* (*Tortula*, Hook. et Grev.) affinis, foliis autem superne latioribus et peristomio longe diverso.

9. D. limbatus (*Mitten*). Dioicus, caule brevi, foliis in comam congestis ovato-elongatis obtusiusculis, nervo fusco in mucronem hyalinum excurrente, margine ad apicem reflexo, cellulis basi laxis pellucidis superne minutis opacis sed ad marginem reflexum margineque ipso pellucidioribus papillosis, perichætialibus conformibus, theca in pedunculo flavo cylindrica.

*Hab.* In Tibet. occid. reg. temp., ad vallem Parang, alt. 10,000 ped., *T. Thomson*!

Species *D. marginato* (*Barbula*, B. & S.) magnitudine habituque similis, sed ab eo et affinibus foliorum cellulis ad marginem pallidioribus chlorophyllo destitutis, unde folium linea pallida intra marginem exaratum esse videtur, diversa. Specimina paucissima vidi.

10. D. chloronotos. (Barbula, *Brid.*—B. arenaria, *Griff. Not.* p. 409; *Icon. Plant. Asiat.* ii. t. ciii. f. 1.)

*Hab.* In Affghanistan, *Griffith.*

Hanc speciem non vidi, sed ex icone a specie europæa meridionali non diversa videtur.

11. D. rigidus. (Barbula, *Schultz.*)

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* (No. 268).

12. D. Javanicus. (Barbula.)

*Hab.* In Himalaya centrali tropica? Nepal, *Wallich*! *J. D. Hooker*! In Ceylon, *Gardner* (No. 160).

13. D. spathulatus. (Gymnostomum, *Harvey*; *Hook. Icon. Plant. Rar.* t. 7.)

*Hab.* In Nepal, *Wallich*!

14. D. involutus. (Gymnostomum, *Hook. Musc. Exot.* t. 154.)

*Hab.* In Nepal, *Gardner*! *et Wallich*! In Himalaya boreali-occident., *Royle*!

## 7. Syntrichia, *Brid.*

1. S. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 58.

*Hab.* In mont. Nilghiri ad arborum truncos, *Gough*! *Perrottet*! *Schmid*!

2. S. princeps. (Tortula, *De Notaris*.—Tortula lævipila, var. vel sp. aff., *Wils. l. c.* p. 323.)

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 172).

3. S. ruralis, *Brid.*

*Hab.* In Tibet. occid. reg. alp. ad Sassar Pass, alt. 16,000–17,000 ped., *T. Thomson*! et in cacumine montis Hera La, alt. 18,000 ped., *Strachey*! etiam in reg. temp. ad Rondu, *T. Thomson*!

Fragmenta tantum, sed a planta europæa non diversa.

4. S. caninervis (*Mitten*). Dioica? cæspitosa, caule breviusculo dichotomo, foliis patentibus ovatis apice obtusis nervo crassiusculo longe excurrente concolori dorso apiceque hyalino scabris, marginibus ubique recurvis integerrimis, cellulis in folii medio inferne tenerrimis hyalinis superne minutis obscuris minutissime papillosis sublævibus, perichætialibus erectioribus marginibus minus recurvis, theca in pedunculo flavo.

Tortula ruralis, var., *Wils. l. c.* p. 322.

*Hab.* In Tibet. occid. reg. temp., ad rupes? *T. Thomson*! (No. 174).

Formis minoribus *S. lævipilæ* primo adspectu similis, sed foliis ovatis, nervo crasso longe excurrente, et marginibus ubique recurvis.

## 8. Syrrhopodon, *Hook. et Grev.*

### * *Orthophyllum.*

1. S. rufescens, *Hook et Grev.* (S. revolutus, *Dozy et Molk. Musc. Archip. Ind.* t. 22, e speciminibus auctorum.)

*Hab.* In Singapore, *Wallich*! Etiam in Java, *Dozy*! et Labuan, *Motley*!

### ** *Eusyrrhopodon.*

2. S. spiculosus (*Hook. et Grev. in Brewst. Edinb. Journ.* v. 3. —S. microphyllus). Dioicus, cæspitosus, caule dichotomo, foliis patentibus siccitate vix mutatis, e basi elliptica utrinque margine spinoso circiter sex-ciliato linearibus obtusis, nervo dorso æque ac pagina spiculis parvis asperrimo, marginibus incurvis minute dense eroso-serrulatis, cellulis calymperoideis in formam ellipticam aggre-

gatis basin totam tertiamque folii longitudinis partem occupantibus, superne minutis obscuris papillosis, perichætialibus conformibus, theca in pedunculo gracili rubro cylindracea collo attenuato, peristomio parvo generis.

*Hab.* In Singapore, *Wallich*! Etiam in Labuan, *Motley*!

*S. Leprieurii* forma et ciliatione foliorum similis, sed minor, foliis basi angustioribus, cellulis calymperoideis minoribus, superne spiculis copiosioribus majoribus vestito. Species hodie a *S. rufescente*, quocum ab auctoribus comparata fuit, longe separanda.

3. S. GRIFFITHII (*Mitten*). Dioicus, parvulus, caule brevi, foliis patentibus inferioribus late lineari-lanceolatis acutis superioribus e basi latiore lanceolatis obtusiusculis, nervo tenui dorso apice spiculoso, marginibus integerrimis tenuiter limbatis incurvis, cellulis calymperoideis in formam ovatam acutam dispositis $\frac{3}{7}$ folii longitudinis æquantibus superioribus minutis obscuris dorso grossiuscule papillosis, perichætialibus conformibus, theca in pedunculo gracili ovali.

*Hab.* Singapore, *Griffith*!

Species a congeneribus statura parvula magnitudine *Pottiæ minutulæ* non dissimili et colore fusco recedens. A *S. trachyphyllo*, quocum papillis foliorum convenit, foliis basi non spinoso-ciliatis diversus. Thecam unam tantum vidi.

4. S. HETEROPHYLLUS (*Mitten*). Cæspitosus, caule elongato, foliis e basi erecta superne paululum dilatata linearibus lanceolatisve obtusis acutisve, nervo crassiusculo excurrente, marginibus tenuiter limbatis serrulatis subintegerrimisve, cellulis calymperoideis in formam ovatam apice retuso dispositis superioribus minutis subobscuris minutissime papillosis pallide viridibus.

*Hab.* In Nepal, *Wallich*! In Ceylon, *Gardner*! (No. 135).

*S. fastigiato* similis, sed foliis siccitate magis incurvis latioribus basi non serrulatis et margine folii ipso teneriore subintegerrimo.

5. S. tristrichus, *Nees ab E.*

*Hab.* In Ceylon, *Gardner*!

6. S. Gardneri, *Schw.* (Calymperes, *Hook. Musc. Exot.* t. 146.—Weissia Macclellandi, *Griff. Not.* p. 408; *Icon. Plant. Asiat.* ii. t. lxxviii. f. 4.)

*Hab.* In Nepal, *Gardner*! *et Wallich*! In Ceylon, *Gardner* (No. 181, 187). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 124); et ad Myrung, *McClelland.*

Specimina Griffithiana non vidi, sed neque in descriptione nec in icone distinctionem a *S. Gardneri* invenio.

7. S. trachyphyllus, *Mont. Sylloge*, p. 47.

*Hab.* Singapore, *Gaudichaud*! Etiam in insula Labuan, *Motley*!

*S. spiculoso* similis, sed foliis siccitate incurvis statim dignoscitur.

8. S. CROCEUS (*Mitten*). Caule cæspitoso dichotomo, foliis patentibus rigidis e basi elliptica haud limbato-lineari spathulatis obtusis, nervo rigido percurrente, marginibus crasse limbatis remote dentatis, cellulis calymperoideis in formam quadratam dispositis tertiam longitudinis baseos ellipticæ occupantibus superioribus (folii baseos) elongatis colore pulchre croceo suffusis, iis folii partis elongatæ parvis obscuris, margine ubi basis elliptica in folium transire et incrassare incipit dentibus brevibus aculeiformibus armato, perichætialibus conformibus, theca in pedunculo elongato ovali.

*Hab.* Singapore, *Wallich*! Etiam in insula Labuan, *Motley*!

*S. rigido*, cujus *S. longisetaceus* C. Mülleri synonymon verum est, persimilis, sed rigidior, foliis basi elliptica haud superne dilatata vaginantibus integerrimis, et cellulis calymperoideis spatium minus occupantibus.

## 9. CALYMPERES, *Swartz*.

1. C. repens. (Syrrhopodon, *Harvey*; *Hook. Icon. Plant. Rar.* t. 22. f. 4.—Orthotrichum undulatum, *Hook. et Grev.* ex parte.)

*Hab.* In Penang, *Wallich*! In Ceylon, *Thwaites*! Etiam in Ternate insula et in Nova Hollandia, fide speciminum Dicksonianorum!

2. C. Moluccense, *Schw.* (C. fasciculatum, *Dozy et Molk Bryol. Javan.* t. xli.)

*Hab.* In Singapore, *Wallich*! Etiam in Java, *Teysmann*! Labuan, *Motley*! Hong-Kong, *Bowring*! et Rauwack, *Gaudichaud*!

3. C. fasciculatum. (Syrrhopodon, *Hook. et Grev. in Brewster's Edinb. Journ. of Sc.* iii. p. 225, cum icone ubi calyptra ad naturam delineata est non obstante observatione cl. *Mülleri, Synops.* i. p. 529.)

*Hab.* In Nepal, *Wallich*! Etiam in Ternate, et Australia e speciminibus Dicksonianis! in insula Pitcairn! necnon in Chili, *Cuming*!

4. C. serratum, *A. Braun*. (C. lonchophyllum, *Schw.* var., *Wils. l. c.* p. 292.)

*Hab.* In Ceylon, *Gardner* (No. 235). Etiam in Java, *Junghuhn*! in Labuan, *Motley*! et in Hong-Kong, *Bowring*!

5. C. SEMILIBERUM. Dioicum, cæspitosum, humile, caule dichotomo, foliis squarrosis lineari-lanceolatis acutis obtusiusculisve, nervo percurrente, marginibus integerrimis incurvis, cellulis calymperoideis hyalinis in formam ovatam acutam totam fere folii basin occupantibus et tertiam folii partem longitudine adæquantibus, cellulis in parte superiore parvis rotundatis obscuris papillosis, perichætialibus conformibus, theca in pedunculo brevi cylindrica, operculo subito subulato capsulam longitudine dimidiam æquante, peristomio dentibus 16 brevibus pallidis linea media exaratis incurvis, calyptra superne scabra thecam ad collum obtegente et basi eam amplexante pluriesve fissa thecam semiliberam relinquente.

*Hab.* In peninsula Malayana, ad Tavoy, in arboribus, *Rev. D. Parish*!

*C. Moluccensi* gracilius et flaccidius. *Caulis* semuncialis. *Pedunculus* capsula duplo longior, foliis perichætialibus brevior. *Calyptra* quam in congeneribus brevior et intumescentia thecarum sæpe pluries fissa; igitur capsula semilibera videtur. *Peristomium* huic generi negatum in speciebus aliis nonnullis inveni, et, si capsulæ perfecte maturatæ caute exploratæ fuerint, in speciebus omnibus adesse credo.

6. C. Dozyanum. (C. Moluccense, *Dozy et Molk. Bryol. Javan.* p. 47, t. xxxvii.)

*Hab.* In India orient. (*ex Herb. Dickson*!).

7. C. Mülleri. (Calymperidium, *Dozy et Molk. Bryol. Javan.* p. 51, t. xlii.)

*Hab.* In Ceylon, *Thwaites*!

Fragmenta pauca huic vel speciei affini referenda.

### 10. Encalypta, *Schreb.*

1. E. vulgaris, *Hedw.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 249).

2. E. commutata, *Nees et Hsch.*

*Hab.* In Tibet. occid. reg. alp., *T. Thomson*! (No. 250 ex parte).

3. E. ciliata, *Hedw.*

*Hab.* In Himalayæ occidentalis regione temperata, Kumaon, *Strachey et Winterbottom*!

4. E. rhabdocarpa, *Schw.*

*Hab.* In Tibet. occid. reg. alp., *Strachey et Winterbottom.* Ad Sassar Pass, alt. 16,000–17,000 ped., *T. Thomson*!

5. E. Tibetana (*Mitten*). Monoica, pusilla, foliis ligulatis oblongisve obtusis, nervo percurrente, marginibus cellulis exstantibus crenulatis, cellulis inferioribus laxissimis superioribus obscuris, theca in pedunculo breviusculo ovato-cylindrica plicata, operculo subæquilongo, peristomio dentibus breviusculis perforatis, calyptra apice lævi.

*Hab.* In Tibet. occid. reg. alp., *T. Thomson*! (No. 250 ex parte).

*Caulis* linearis bilinearisve. *Pedunculus* bilinearis purpureus. *Folia* brevia lata comalia oblonga ad medium laxissimè areolata.

De *Hymenostomo encalyptoidi* (Griff. Not. p. 398, et Icon. Plant. Asiat. ii. t. ciii. f. 11.), an species indica vel mera *Encalyptæ vulgaris* analysis sit, silente Griffithio nihil dicendum est.

## § IV. Grimmiaceæ.

Orthotrichaceæ ex parte, Ripariaceæ et Grimmiaceæ *Schimp. Coroll.*

### 1. Cinclidotus, *Beauv.*

1. C. fontinaloides, *Beauv.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 227).

## 2. Grimmia, *Ehrh.*

### § 1. *Schistidium.*

1. G. apocarpa, *Hedw.* var. stricta. (G. stricta, *Turn.*)
*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 318). In Himalaya boreali-occident., *T. Thomson* (No. 286). In Kumaon, *Strachey et Winterbottom*!

2. G. anodon, *Bruch et Schimp.*
*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 287, 288, 289, 290).

### § 2. *Eugrimmia.*

3. G. Tergestina, *Tommas.*
*Hab.* In Tibet. occid. reg. temp., *T. Thomson* (No. 281 et forsan No. 311).

4. G. leucophæa, *Grev.* (G. subfusca, *Wils. l. c.* p. 323.)
*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 296).

5. G. reduncA (*Mitten*; *Wils. l. c.* p. 323). Dioica? caule cæspitoso elongato ramoso gracili, foliis e basi erecta subelliptica patentibus lanceolatis nervo percurrente carinatis margine integerrimo recurvo, cellulis in basi media ad nervum elongatis angustis pellucidis marginalibus 4–5-seriatis pellucidis superioribus minutis subrotundis subobscuris, perichætialibus longioribus basi latioribus convolutaceis, theca in pedunculo brevi arcuato parva ovali lævi, operculo conico, peristomio dentibus brevibus.
*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 294).
*Caulis* circiter uncialis, gracilis, foliis fuscescentibus. *G. elongatæ* similis, sed theca in pedunculo cygnicolli et structura foliorum aliena. *Folia* in statu sicco non incurva sed laxe appressa.

6. G. inflectens (*Mitten*). Monoica, caule cæspitoso humili ramoso, foliis siccitate incurvis e basi elliptica erecta sensim lanceolatis patulis, apicibus incurvis supremis hyalino-piliferis, nervo percurrente, marginibus recurvis, cellulis basi angustis elongatis parallelogrammaticis superne dimidium versus partis ellipticæ majoribus oblongis quadratisque pellucidis utrinque ad margines aggregatis et $\frac{1}{4}$ latitudinis folii ipsius efformantibus, superioribus quadrato-rotundatis distinctis, perichætialibus basi latioribus convolutaceis apice hyalinis, theca in pedunculo brevi cygnicolli perichætium longitudine æquante parva ovata lævi, operculo conico brevi rostrato, peristomio dentibus solidis, flore masculo ad basin perichætii gemmiformi, antheridiis elongatis.
G. funalis, *Wils. l. c.* p. 323.
*Hab.* In Nepal orient. reg. alp., *J. D. Hooker*! (No. 248, ex parte).
*G. reduncæ* similis, foliis longioribus basi diverso modo areolatis, floreque masculo ad basin perichætii distincta. A *G. uncinata*, curvatione foliorum exsiccatorum simili, structura baseos discrepans.

7. G. MACROTHECA (*Mitten*). Monoica, caule cæspitoso breviusculo ramoso, foliis patentibus e basi ovali late lanceolatis apice hyalino brevi piliferis nudisve, nervo percurrente, marginibus recurvis, cellulis basi laxis oblongis parallelogrammaticis, superne minutis obscuris, perichætialibus apice angustioribus, theca in pedunculo elongato cygnicolli-flexo anguste elliptica subcylindrica, operculo conico rostrato, peristomio dentibus lanceolatis lævibus rubris.

G. oblonga, *Wils. l. c.* p. 323.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 316).

8. G. commutata, *Hübner*. (G.? incana, planta mascula, *Wils. l. c.* p. 323, quoad specimen No. 281.)

*Hab.* In Himalayæ occident., Kashmir, et Tibet. occid. reg. temp., *T. Thomson*! (No. 281, 282, 317, 319, 327).

9. G. ovata, *Web. et Mohr.*; *Griff. Not.* p. 413; *Icon. Plant. Asiat.* ii. t. lxxix. f. 4. (G. lurida, ex parte, *Wils. l. c.* p. 323.)

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 283, 284, 285, 291, 299, 307, 320, 325). In mont. Nilghiri, *Gardner*! In mont. Khasian., ad rupes et monumenta circa Moflong abundans, *Griffith*! In Ceylon insula, *Gardner*! (No. 329).

Specimina No. 285, G. *lurida*, Wils. MSS., cum Funkianis *G. affinis*, Hsch., conveniunt, et ab aliis, foliis inferne paululum angustioribus et statura parum graciliore, tantillum recedunt.

10. G. Nilghiriensis, *C. Müller, Bot. Zeit.* 1853, p. 62.

*Hab.* In mont. Nilghiri, *Schmid.*

Si inflorescentia vere dioica sit, species distincta; sed specimina Nilghiriana supra ad *G. ovatam* adscripta certe monoica inveni.

11. G. STRICTIFOLIA (*Mitten*). Dioica? caule elongato parce ramoso subsimplici, foliis patentibus strictis e basi subovali lanceolatis obtusis nervo crasso percurrente carinatis margine recurvis, cellulis baseos ad marginem parvis pellucidis oblongis in medio luteis parietibus interruptis in massam subindistinctam conflatis superioribus minoribus obscuris, perichætialibus basi parum latioribus cæteroquin conformibus, theca in pedunculo brevi ovali cylindrica, operculo conico rostro obtuso, peristomio dentibus lanceolatis subcrenulatis, annulo angusto.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*!

*G. protensæ* habitu similis, gracilior tamen, fusca, operculo conico-obtuso, peristomio dentibus solidioribus.

12. G. FUSCESCENS (*Mitten*). Dioica, cæspitosa, caule elongato ramoso, foliis patentibus e basi ovali lanceolatis apice angustis sæpe hyalino-piliferis nervo percurrente carinatis, marginibus recurvis, cellulis baseos ad margines serie unica cellularum pellucidarum cæteris minutis seriatis omnibus conformibus distinctis, perichætialibus pluribus ovatis convolutis erectis interioribus longioribus, theca in pedunculo se-

munciali ovali, operculo subulato æquilongo, peristomio dentibus dicranis in membrana paulisper exsertis.

Racomitrium fuscescens, *Wils. l. c.* p. 324.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 304).

*G. microcarpæ* similis, foliis autem statu sicco strictioribus, colore intensiore fuscescente, foliis perichætialibus abbreviatis a caulinis diversiformibus.

Obs. *Grimmia No.* 3, Griff. Not. p. 413, ad speciem quamdam *Bartramiæ* pertinet.

### § 3. *Rhacomitrium.*

13. G. subsecunda. (Trichostomum, *Hook. et Grev.*)

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 280, 300, 301, 312, 313, 323). Nepal, *Wallich*! Kumaon, *Strachey et Winterbottom*!

14. G. lanuginosa. (Trichostomum, *Hedw.*)

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 309, 315).

15. G. canescens. (Trichostomum, *Hedw.*)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 306). In Ceylon, *Gardner*!

16. G. Himalayana (*Mitten*). Dioica, cæspitosa, caule decumbente ramoso, foliis patenti-divergentibus apicibus recurvis sæpe hyalino-apiculatis e basi ovata lanceolatis nervo percurrente carinatis marginibus recurvis, cellulis quasi seriatis confluentibus conformibus opacis parietibus pellucidis, perichætialibus interioribus tribus erectis elongate oblongis breviter apiculatis convolutis, theca in pedunculo semunciali ovali erecta, operculo subulato subæquilongo, peristomio dentibus breviusculis solidis bipartitisve, annulo simplici.

Racomitrium pumilum et R. subsecundum ex parte, *Wils. l. c.* pp. 324, 325.

*Hab.* In Himalayæ centralis et orient. reg. temp. et alp., Sikkim, *J. D. Hooker* (No. 298, 301, 305, 321, 326). Nepal, *Wallich*!

*G. fasciculari* habitu similis, gracilior, ramis geniculatis.

17. G. Khasiana (*Mitten*). Caule elongato simpliciusculo, foliis e basi suberecta superne dilatata patulis sensim lanceolatis nervo percurrente apice longiusculo hyalino piliferis, pilo minute dentato, cellulis basi ad medium folii oblongis mox in minutas rotundatas superne indistinctas transeuntibus.

G. commutata, *Wils. l. c.* p. 324.

*Hab.* In mont. Khasian. reg. temp., ad rupem Kollong, inter *Cladonias*, *J. D. Hooker et T. Thomson*! (No. 279).

*G. elatior* habitu facie staturaque similis, sed foliis a basi angustiore cito

dilatatis quasi folia vaginantia formantibus, præterea cellularum forma diversa.

A *G. commutata* foliorum forma satis diversa.

18. G. Nepalensis. Monoica, caule brevi ramoso, foliis e basi subovali erecta sensim lanceolatis patulis apice incurvis, nervo percurrente, marginibus recurvis, cellulis basi elongatis parallelogrammaticis ad margines in partem latissimam portionis ovalis in latiores brevioresque oblongas quadratasque pellucidas deinde in minutas oblongas rotundasque angulatas transeuntibus, perichætialibus latioribus convolutaceis, theca in pedunculo brevi cygnicolli flexo ovali plicata, flore masculo in ramorum axillis.

G. funalis, *Wils. l. c.* p. 323.

*Hab.* In Nepal orient. reg. alp., *J. D. Hooker*! (No. 248, ex parte).

*G. Schultzii* (*Dryptodon*, Brid.) similis, sed foliis siccitate curvatis subcrispatis, pilo hyalino vix conspicuo et structura foliorum supra descripta distincta.

19. G. elongata, *Kaulf.* (G. orientalis, *Wils. l. c.* p. 323.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*!

### 3. Glyphomitrium, *Brid.*

(Brachysteleum, *Rchb.*; Notarisia, *Hampe*; Ptychomitrium, *B. & S.*; Brachyodus, *Furnr.*; et Campylosteleum, *B. & S.*)

Inter genera sic dicta supra memorata differentiam nullam inveni; structura foliorum, thecarum, peristomii, et *calyptræ* forma, etiam habitu et habitatione, omnino eadem sunt.

1. G. Tortula, *Mitten.* (Didymodon, *Harvey*; *Hook. Icon. Plant. Rar.* t. 18. f. 2.—Ptychomitrium speciosum, *Wils. l. c.* p. 325.)

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 246). Nepal, *Wallich*! *J. D. Hooker* (No. 245, 247). Kumaon, *Strachey et Winterbottom*! In mont. Nilghiri, *Gardner*!

2. G. Indicum, *Mitten.* (Trichostomum, *Willd.*—Brachysteleum, *C. Müller, Synops.* i. p. 768.)

*Hab.* In India orient. (*Herb. Willdenow*).

## § V. Orthotrichaceæ.

Orthotrichaceæ ex parte, Zygodontaceæ ex parte, *Schimp. Coroll.*

### 1. Drummondia, *Hook.*

1. D. Thomsoni (*Mitten*). Monoica, caulibus repentibus, ramis numerossissimis erectis stratum densum formantibus, foliis rameis patentibus elongato-oblongis obtusiusculis acuminatisque nervo sub apice evanido carinatis, marginibus integerrimis, cellulis ubique parvis

parum obscuris lævibus, perichætialibus majoribus erectis obtusis convolutis, theca in pedunculo breviusculo ovali, operculo conico subulato, calyptra ad basin thecam tegente straminea nitida, flore masculo parvo in ramorum apicibus gemmiformi.

D. brevifolia, *Wils. l. c.* p. 325.

*Hab.* In Tibet. occid. reg. temp., rupestribus, *T. Thomson* (No. 237).

*D. clavellatæ* simillima, foliis tamen haud ovato-elongatis sed fere ejusdem latitudinis a basi ad apicem, ubi acuminare incipiunt, apice acutatis plus minusve in acumen productis, structura illis *D. clavellatæ* omnino similibus. *Theca* in speciminibus omnibus adeo juvenilis ut peristomium explorari non potest.

## 2. Zygodon, *Hook. et Tayl.*

1. Z. obtusifolius, *Hook.*

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 204). In Nepal, *Wallich*!

2. Z. acutifolius, *C. Müller, Bot. Zeit.* 1833, p. 58.

*Hab.* In mont. Nilghiri, *Schmid*!

3. Z. brevisetus (*Wils. l. c.* p. 325). Dioicus, cæspitosus, caule sub perichætio innovante dichotomo, foliis patulis recurvis siccitate rectis incurvisque late lanceolatis obtusis acutatis nervo sub apice evanido carinatis, cellulis minutis subobscuris papillosis, perichætialibus basi latioribus, theca in pedunculo gracili luteo pyriformi leviter 8-striata, peristomio nullo.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, ad truncos arborum, *J. D. Hooker*! (No. 198).

*Z. conoideo* (*Z. Brebissonii*, Bryol. Europ.) similis; sed folia breviora et obtusiora. *Caulis* uncialis. *Pedunculus* trilinearis. A *Z. intermedio* collo thecarum longe pyriformi differt.

4. Z. cylindricarpus, *C. Müller, Bot. Zeit.* 1853, p. 59.

*Hab.* In mont. Nilghiri, *Schmid*! *Gough*!

5. Z. tetragonostomus, *Braun.*

*Hab.* In mont. Nilghiri, *Perrottet*! *Gough*! *Schmid*!

6. Z. strictus (*Mitten*). Cæspitosus, caule dichotomo, foliis erecto-patentibus elongato-ellipticis acutis nervo crassiusculo in apiculum brevissimum excurrente carinatis, marginibus integerrimis lævibus, cellulis basi paucis parallelogrammaticis totam folii latitudinem occupantibus superioribus minutis distinctis lævibus.

*Z.? viridissimo* aff., *Wils. l. c.* p. 325.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, ad rupes? *J. D. Hooker*! (No. 292).

*Z. viridissimo* magnitudine similis, ab eo tamen et affinibus foliis strictis nullibi recurvis, nervo excurrente statim dignoscitur. Foliorum forma

elongate elliptica iis *Z. Menziesii* non dissimilis, sed substantia firmiore diversa. An *Drummondia*?

### 3. Orthotrichum, *Hedw.*

1. O. anomalum, *Hedw.* (O. leptocarpum, *Wils. l. c.* p. 326.)
*Hab.* In Himalayæ occident., Kashmir, et Tibet. occid. reg. temp., *T. Thomson*! (No. 209, 210 *b*, 251).

2. O. cupulatum, *Hoffm.*
*Hab.* In Himalayæ occidentalis reg. temp., Kashmir, *T. Thomson*! (No. 210).

3. O. obtusifolium, *Schrad.*
*Hab.* In Himalayæ occidentalis reg. temp., ad flumen Chenab (cum *O. fastigiato* intermixtum), *T. Thomson*!

4. O. crenulatum (*Mitten*). Monoicum, humile, pulvinatum, foliis patulis elongato-ellipticis obtusis nervo sub apice caviusculo evanido margine reflexo apice in superioribus crenulatis, cellulis amplis iis *O. Sprucei* similibus, theca pyriformi 8-plicata, peristomio dentibus 8 bigeminatis, calyptra pallida nuda.
*Hab.* In Tibet. occid. reg. temp. ad Rondu (inter cæspites *Drummondiæ Thomsoni*), *T. Thomson*!
*O. Sprucei* maxime affine, sed foliis apicem versus paululum angustioribus caviusculis apice, absque apiculo, erosis, theca paululum breviore et colore foliorum pallidiore diversum puto, quamvis persimillimum.

5. O. fastigiatum, *Bruch in Brid.* i. p. 785. (O. alpestre, *Wils. l. c.* p. 326.)
*Hab.* In Himalayæ occident. reg. temp., Kashmir et ad flumen Chenab, *T. Thomson*! (No. 212, 252).

6. O. rupestre, *Schleich.*
*Hab.* In Himalayæ occident. reg. temp., Kashmir, *T. Thomson*! (No. 208).

7. O. speciosum, *Nees ab E.*
*Hab.* In Himalayæ orient., Sikkim, *J. D. Hooker*; et in Tibet. occident. reg. alp., *T. Thomson*! (No. 211).
Specimina fructu juvenili, sed a specie europeana non diversa videntur.

8. O. Hookeri (*Wils. l. c.* p. 326). Monoicum, laxe cæspitosum, caulibus sæpe decumbentibus dichotomis elongatis subsimplicibusve, foliis e basi elliptica suberecta sensim lanceolatis acutis patentidivergentibus siccitate patentibus strictis acutis nervo sub apice evanido carinatis, marginibus reflexis, cellulis minutissimis ovoideis conformibus minute papillosis basi infima ad nervum paucis elongatis flavidis marginalibus inconspicuis, perichætialibus conformibus, theca in pedunculo elongato ovali cylindrica lævi ad os plicata, operculo

conico-subulato, peristomio dentibus geminatis, ciliis latis alternatim brevioribus, calyptra thecam totam obtegente parce ramentacea.

*Hab.* In Himalayæ reg. alp. et temp., Sikkim, *J. D. Hooker* ! (No. 215, 217). Nepal, *Wallich* ! *J. D. Hooker* ! (No. 213). Kumaon, *Strachey et Winterbottom* !

*O. specioso* rigidior, foliis cellulis minoribus firmis et theca in pedunculo longiore.

### 4. Ulota, *Brid.*

1. U. robusta (*Mitten*). Monoica, cæspitosa, caule elongato dichotomo, foliis e basi late ovali erecta lanceolatis divergentibus patulis siccitate crispatis nervo sub apice evanido carinatis, marginibus integerrimis uno latere sæpe recurvis, cellulis basi elongatis angustis ad marginem serie unica pellucidarum mox in rotundatas inter se subdistantes transeuntibus, dorso papillosis, perichætialibus erectis basi latiore longiore, theca in pedunculo longiusculo crasso ovali macrostoma 8-plicata, operculo planiusculo brevi-rostrato, peristomio dentibus bigeminatisa picibus liberis, ciliis octo latis, calyptra ramentacea, flore masculo in axillis foliorum gemmiformi.

Orthotrichum robustum, *Wils. l. c.* p. 327.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 216, 219, 244).

*Caulis* uncialis–sesquiuncialis. *Pedunculus* tri- quadrilinearis. *U. phyllantho* statura similis, sed foliis a basi erecta ovali angustatis patulis et cellulis paulum majoribus recedit. Ab *O. Bruchii* caulibus minus confertis, foliis laxioribus, pedunculo crasso et theca brevi diversa.

2. U. Schmidii, *Mitten.* (Orthot., *C. Müller, Bot. Zeit.* 1853, p. 61.)

*Hab.* In mont. Nilghiri, *Schmid.*

### 5. Macromitrium, *Brid.*

1. M. Perrottetii, *C. Müller, Synops.* i. p. 721.

*Hab.* In mont. Nilghiri, *Perrottet* ! In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 239).

2. M. squarrulosum, *C. Müller, Bot. Zeit.* 1853, p. 61.

*Hab.* In mont. Nilghiri, *Schmid.*

3. M. calycinum (*Mitten*). Monoicum, humile, caule repente ramis brevibus dense confertis erectis, foliis patentibus lanceolatis sensim acutis nervo sub apice evanido carinatis marginibus integerrimis medio recurvis, cellulis basi paucis ad nervum parallelogrammaticis cito in quadratas parvas rotundatasque distinctas transeuntibus, perichætialibus elongatis erectis late lanceolatis brevi-nervatis in tubum convolutis cellulis elongatis carnosulis areolatis, theca in pedunculo elongato ovali lævi, peristomio dentibus 16 latiusculis brevibus.

M. parvulum, *Wils. l. c.* p. 327.

*Hab.* In Ceylon, *Gardner* (No. 226).

Parvulum, dense cæspitosum, magnitudinem *Zygodontis viridissimi* vix superans. *Folia perichætialia* caulinis quadruplo longiora. Species primo visu *Drummondiis* affinis.

4. M. Assamicum, *Mitten.* (Orthotrichum, *Griff. Not.* p. 402; *Icon. Plant. Asiat.* ii. t. lxxvii. f. 11.)

*Hab.* In Assam superiore, alt. 600 (6000?) ped., ad Negrogam et in agro Muttack in arboribus, *Griffith.* Forsan ad *M. Nepalense* referendum.

5. M. Nepalense, *Schw.*

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 214, 218). Nepal, *Wallich.* In peninsula Malayana, ad Tavoy, *Rev. D. Parish.* Etiam in insulis Hong-Kong et Philippinis.

6. M. CALYMPEROIDEUM (*Mitten*). Dioicum? caule arcte repente, ramis brevissimis erectis, foliis patentibus elliptico-lanceolatis lanceolatisque siccitate crispatis apice acutis obtusiusculisve nervo in apice evanido carinatis marginibus integerrimis apicem versus cellulis prominentibus erosis, cellulis rotundatis ubique papillosis distinctis conformibus, perichætialibus brevibus ovato-lanceolatis subserrulatis acutis, theca in pedunculo elongato rubro ovali-cylindrica fusca, operculo conico-subulato, peristomio dentibus geminatis revolutis, calyptra magna thecam totam obvelante basi pedunculum amplectente.

*Hab.* In peninsula Malayana, ad Tavoy, in arborum truncis, *Rev. D. Parish*!

*M. Nepalensi* affine, sed ramis brevibus densis, foliis siccitate crispatis haud in spiram contortis erosis, cellulis majoribus ubique distinctis, peristomio dentibus geminatis et calyptra parcius ramentacea diversum.

7. M. SPATHULARE (*Mitten*). Dioicum? caule repente ramis brevissimis densifoliosis, foliis patentibus apicibus incurvis siccitate arcte crispatis spathulatis obtusis nervo sub summo apice evanido carinatis, marginibus integerrimis, cellulis basi oblongis superioribus rotundis minutis distinctis lævibus, perichætialibus longioribus lanceolatis, theca in pedunculo breviusculo ovali, operculo conico-subulato, calyptra thecam ad $\frac{3}{4}$ obtegente ramentacea.

*Hab.* Ad Madras p., *Wight*! Etiam in imperio Sinensi, ad Chusan, *Alexander*!

A *M. Nepalensi* statura paulo minore, foliis spathulatis apice rotundatis, cellulis distinctis et brevitate calyptrarum recedens.

8. M. Moorcroftii, *Schw.* (M. Moorcroftii, M. tortuosum, et M. pileatum, *Wils. l. c.* p. 327.—Orthotrichum Moorcroftii, *Griff. Not.* p. 401; *Icon. Plant. Asiat.* ii. t. lxxvi. f. 4.)

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 206, 238). In Nepal, *Moorcroft*! *Wallich*! *J. D. Hooker* (No. 243). Kumaon,

*T. Thomson*! (No. 220). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 221, 222, 228, 242, 255, 256).

9. M. Muellerianum, *Mitten*. (M. uncinatum, *C. Müller, Bot. Zeit.* 1853, p. 62.)

*Hab.* In mont. Nilghiri, *Schmid*; *Gardner* (No. 33). Nomen cl. Mülleri "uncinatum" a Bridelio jam abusum.

10. M. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 61. (M. involutifolium, *Mont., Musci Nilghirienses.*)

*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid*! *Gardner*! *et Gough*!

11. M. DENSUM (*Mitten*). Dioicum? caule repente, ramis brevissimis dense confertis erectis, foliis patentibus siccitate compacte spiraliter tortis lingulatis obtusissimis retusis nervo tenuiusculo in mucronem brevissimum excurrente carinatis marginibus integerrimis, cellulis ubique parvis rotundis distinctis, perichætialibus conformibus? theca in pedunculo elongato ovali lævi.

*Hab.* In Nepal, *Wallich*!

*M. Wagneriano*, habitu aspectuque simile, sed minus, foliis brevioribus retusis haud plicatis. A speciebus reliquis Indicis valde diversum et statu sicco *Drummondiæ clavellatæ* subsimile.

12. M. FASCICULARE (*Mitten*). Monoicum, *M. Reinwardtii* simillimum, sed gracilior, foliis late lanceolatis acutis nervo percurrente carinatis integerrimis, cellulis a basi ad medium elongatis angustis in folii medio ad nervum altius quam ad margines adscendentibus cæteris parvis rotundis distinctis, perichætialibus caulina æquantibus erectis inferne convolutis superne acuminatis, theca in pedunculo elongato gracili ovali, ore plicato, operculo subulato, calyptra ramentis paucis sparsis pilosa.

M. Reinwardtii, *Wils. l. c.* p. 327.

*Hab.* In Ceylon ad Horton Plains et Newera Ellia, *Gardner*! (No. 225, 229, 230).

*M. Reinwardtii* valde affine, sed structura foliorum, cellulis minoribus numerosioribus infra medium folii descendentibus et calyptra parce pilosa discrepans.

13. M. SEEMANNI (*Mitten*). Dioicum, luteo-fuscescens, caule repente ramis brevibus fastigiatim ramulosis dense depresso cæspitoso, foliis patentibus elongato- elliptico-lanceolatis nervo sub apice evanido carinatis, cellulis basi angustis elongatis ad folii dimidii longitudinem protractis sensim in minutas rotundatas inter sese distantes transeuntibus lævibus, perichætialibus erectis latioribus acuminatis, theca in pedunculo mediocri crassiusculo breviter ovata lævi ore tantum sulcata, operculo conico-subulato, peristomio dentibus 16 æquidistantibus, calyptra nuda.

*Hab.* In India orient. (fide speciminis Dicksoniani). Etiam in St. Helena insula copiose legit cl. *Berthold Seemann*!

*M. nitido* simile, sed paululum robustius, foliis cellulis firmioribus et minoribus. *Florescentia* probabiliter dioica; nam flores masculos, quos in *M. nitido* facillime in ramulorum apicibus invenies, in *M. Seemanni* frustra quæsivi. Inter Macromitria Indica *M. Reinwardtii* proxima species, quam, fortasse errore Dicksoni ad floram Indiæ adscriptam, excludere non audeo.

14. M. sulcatum, *Brid.* (M. Nilgiriense, *C. Müller*, *Synops.* i. p. 737. —M. sulcatum, M. longifolium, et M. corrugatum, *Wils. l. c.* p. 328. —Schlotheimia sulcata, *Griff. Not.* p. 405; *Icon. Plant. Asiat.* t. lxxviii. f. 1.)

*Hab.* In Nepal, *Gardner*! *Wallich*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 223, 236, 240, 241). In mont. Nilghiri, *Gough*! Ad Bombay, *Kegel*! In Ceylon, *Gardner* (No. 227, 232, 234). Et forma foliis angustioribus, in mont. Nilghiri, *Perrottet*! *M'Ivor*! ad Madras, *Wight*! in Ceylon, *Gardner* (No. 231, 254) *et Thwaites*!

Species latitudine et corrugatione foliorum valde varians, foliis apicem versus erosis subintegerrimisve, cellulis minutis obscuris sed inter se distantibus ut pagina luteo-fulva punctis parvis notata videatur, basin versus nonnullis in paginarum medio papillis grossis armatis, basi infima uno latere tantum ad nervum cellulis laxis pellucidis calymperoideis in formam triangularem aggregatis, quibus notis per variationes omnes statim dignoscere potest.

15. M. CEYLANICUM (*Mitten*). Dioicum? *M. sulcato* simile, foliis patentibus curvatis apicibus erectis siccitate uncinato-incurvis e basi subelliptica angustatis longe lanceolatis apice acuminatis nervo excurrente carinatis margine apice serrulato, cellulis superioribus minutis ovoideis in lineis longitudinalibus distinctis basi papillosis elongatis angustis, perichætialibus erectis brevioribus ellipticis acuminatis, theca in pedunculo semunciali, peristomio et calyptra *M. sulcati*.

M. tersum, *Wils. l. c.* p. 328.

*Hab.* In Ceylon, *Walker et Gardner* (No. 253).

A *M. sulcato*, quod statura colore necnon thecæ forma et plicatione simulat, ambitu structuraque foliorum distinctissimum.

16. M. FULVUM (*Mitten*). Dioicum, aurantiaco-fuscum, caule repente ramis elongatis simplicibus curvatis, foliis patulo-recurvis siccitate parum mutatis lanceolatis longe sensim angustatis apice breviter apiculatis subintegerrimis margine inferne recurvis nervo sub summo apice evanido carinatis, cellulis basi pluribus elongatis angustis flavidis papillosis superioribus longitudinaliter seriatis ovoideis omnibus distinctis lævibus, perichætialibus erectis basi latioribus, theca in pedunculo brevi gracili globoso-ovata plicata, operculo conico-subulato recte longirostrato, peristomio rubro brevi dentibus in tubulum coalitis, calyptra glabra thecam totam obtegente.

*Hab.* In Ceylon, ad Rambodde, *Gardner*! (No. 233).

*M. cirrhoso* robustior, foliis subintegerrimis haud papillosis. A *M. longifolio* præterea statura majore, foliis angustioribus siccitate nec tortis neque crispatis et pedunculo lævi distinctum.

17. M. TORULOSUM (*Mitten*). Dioicum? caule gracili elongato repente et ut videtur pendulo flexuoso, foliis parvis angustis appressis, ramis remotis brevibus scopæformibus, foliis e basi brevi erecta patentibus apicibus erecto-curvatis siccitate uncinato-incurvis mollibus inferne ellipticis inde sensim angustatis lineari-lanceolatis acutis margine altero reflexo apice minutissime eroso nervo percurrente carinatis, cellulis superioribus parvis angulato-rotundatis distinctis infra medium oblongis basi elongatis parce papillosis, perichætialibus paulo brevioribus caulinis fere conformibus, theca in pedunculo bilineari breviter ovata in collum sensim attenuato lævi, operculo subulato, peristomio brevi tubuloso truncato rubro, calyptra profunde laciniata lævi thecam ad $\frac{3}{4}$ obtegente.

*Hab.* Ceylon, *Thwaites*.

*Color* fulvus, ætate fuscus. *M. fulvo* ambitu foliorum simile, sed substantia molliore et apicibus sensim angustatis non acuminatis. Habitu peculiari, caule filiformi flexuoso repente, ramis brevibus crassis et pedunculi brevitate a reliquis speciebus Indicis diversum.

18. M. goniorhynchum, *Mitten*. (Schlotheimia goniorhyncha, *Dozy et Molk. Bryol. Javan.* cum icone, ined.)

*Hab.* In mont. Khasian. reg. subtrop. sterili, inter *M. sulcatum* repens, *J. D. Hooker et T. Thomson* ! Etiam in insulis Javæ et Sumatræ.

19. M. NIGRICANS. Dioicum? caule repente ramis simplicibus apiceve furcatis, foliis e basi erectiuscula patentibus apicibus incurvis siccitate cirrhatis inferne ellipticis sensim superne angustioribus lanceolatis apice abrupte acutatis apiculatis nervo excurrente apice eroso carinatis, cellulis inferioribus angustis lunatis pallidis a basi ad folii medium altius ad nervum quam ad margines adscendentibus inde ad apicem parvis rotundis obscuris, perichætialibus erectis brevioribus ellipticis acutis, theca in pedunculo bilineari subglobosa lævi fusca, peristomio dentibus parvis brevibus inflexis.

*Hab.* Coorg. In arborum ramulis (*Herb. Van den Bosch*).

*Rami* unciales nigro-fusci apicibus viridibus. *M. angustifolio* (Dozy et Molk.) subsimile, ramis autem apice tantum furcatis. *M. longicauli* gracilius. Species ob foliorum structuram inter illas peninsulæ Indiæ singularis.

## 6. SCHLOTHEIMIA, *Brid.*

1. S. GREVILLEANA. Dioica? caule repente, ramis cæspitosis brevi-usculis ramulosis, foliis patentibus siccitate appressis subtortis ligulatis obtusis brevissime apiculatis nervo excurrente carinatis rugulosis, cellulis inferne angustis superne rotundatis parvis omnibus conco-

loribus fuscis, perichætialibus acutioribus, theca cylindracea in pedunculo sesquilongiore, peristomio dentibus geminatis siccitate recurvis, interno processibus latiusculis fuscis papillosis dentibus brevioribus, calyptra apicem versus scabrella.

Orthotrichum squarrosum, *Griff. Not.* p. 403; *Icon. Plant. Asiat.* t. lxxvii. f. 1.—S. rugifolia, *Greville in Herb. Gardner.*

*Hab.* In mont. Nilghiri, *Gardner*! In mont. Khasian. in sylvis Myrung ad terram, *Griffith*!

*S. rugifoliæ* simillima, foliis autem paululum longioribus, haud ovatis, sed dimidio inferiore vix latiore quam dimidio superiore.

## § VI. Funariaceæ.

Ephemereæ et Funariaceæ, *Schimp. Coroll.*

### 1. Physcomitrium, *Brid.*

1. P. repandum. (Gymnostomum repandum, *Griff. Not.* p. 392.)

*Hab.* In Assam superiore ad Suddya, *Griffith*! In Nepal, *Wallich*!

Species foliis lanceolatis fere toto ambitu serrulatis et operculo breviter curvirostrato facile discernenda. Statura *P. pyriformi* paulo minor.

2. P. pulchellum (Gymnostomum, *Griff. Not.* p. 393). "Caule simplici, foliis congestis ascendenti-patentibus spathulato-lanceolatis apiculatis repandis marginatis subintegris, vena in apiculum excurrente, capsula turbinato-pyriformi, operculo planiusculo umbonato" (*Griff. l. c.*).

*Hab.* In Assam superiore circa Suddya (*P. repando* consociatum), *Griffith*!

*P. acuminato* similis, sed e speciminibus mancis paucis, quæ tantum vidi, distinctum videtur.

3. P. cyathicarpum (*Mitten*). Caule brevissimo, foliis paucis patentibus lanceolatis, nervo in acumine excurrente, marginibus a medio ad apicem serratis, cellulis laxis, theca in pedunculo æquilongo hemisphærica cyathiformi, operculo brevi conico.

P. immersum, *Wils. l. c.* p. 329.

*Hab.* In Nepal, *Wallich*! In planitie Panjab Gangetica, ad Ferozepore, *T. Thomson*! (No. 361 *b*).

*P. immerso* (Sullivanti) persimile, sed foliis latioribus, cellulis laxioribus latioribus longioribusque et operculo breviore. Substantia thecæ crassiuscula, sed textura laxa tenera. Flos masculus ut in affinibus.

### 2. Entosthodon, *Schw.*

1. E. Buseanus, *Dozy et Molk. Bryol. Javan.* p. 31, t. xxii. (E. flavescens, *Wils. l. c.* p. 329.)

*Hab.* In Ceylon, *Gardner* (No. 356). In mont. Nilghiri (inter *Marchantiam nitidam*), *Perrottet*!

2. E. Perrottetii. (Physcomitrium, *Mont.*)
*Hab.* In mont. Nilghiri, *Perrottet*!
*Peristomium* dentibus brevibus pallidis in specimine a cl. Montagneo mihi benevolentissime donato observavi.

3. E. physcomitrioides, *Müller*. (Funaria, *Mont.*)
*Hab.* In mont. Nilghiri, *Perrottet*!
*Peristomium* simplex, et dentium directio recta potius hujus generis.

4. E. Wallichii (*Mitten*). *E. Templetoni* similis, foliis subspathulatis apiculatis acutis, nervo ad $\frac{3}{4}$ evanido, margine non incrassato apicem versus serrulato, cellulis laxis, theca in pedunculo gracili elongato pyriformi, peristomio nullo?
Weissia Templetoni, *Griff. Not.* p. 406; *Icon. Plant. Asiat.* ii. t. lxxviii. f. 11.
*Hab.* In Nepal, *Wallich*! In mont. Khasianis ad Moflong, *Griffith*!
Habitu *E. Templetoni*, sed longe gracilior, foliis multo angustioribus apiculatis serratis. Folia in icone Griffithiana ad specimina vix quadrant.

5. E. diversinervis, *C. Müller*, *Bot. Zeit.* 1853, p. 20.
*Hab.* In mont. Nilghiri, *Schmid*.

6. E. submarginatus, *C. Müller*, *l. c.*
*Hab.* In mont. Nilghiri, *Schmid*.

7. E. Rottleri, *C. Müller*. (Gymnostomum, *Schw.*)
*Hab.* In India orient., *Rottler et Wight*!

8. E. piliferr (*Mitten*). Caule brevi, foliis obovatis ellipticisve in apiculum piliformem acuminatis, nervo in apicem percurrente, margine apice indistincte serrulato, cellulis laxis, theca in pedunculo elongato pyriformi, operculo conico obtuso.
*Hab.* In Tibet. occid. reg. temp., *T. Thomson*!
*E. fasciculari* similis, foliis autem piliferis. An peristomatus sit, specimina thecis immaturis non elucent.

9. E. nutans (*Mitten*). Caule breviusculo, foliis paucis patentibus elliptico-lanceolatis longe attenuatis, nervo superne evanido, margine a medio ad apicem serratis, cellulis laxis, theca in pedunculo elongato cygnicolli-flexo pendula subglobosa, operculo plano, calyptra parva dimidiata.
Physcomitrium nutans, *Wils. l. c.* p. 329.
*Hab.* In planitie Panjab ad Ferozepore, *T. Thomson* (No. 355).
*Caulis* linearis. *Pedunculus* bilinearis. *Physcomitrio cyathicarpo* statura adspectuque similis. *Theca* in pedunculo gracillimo, pro plantula magna, nutans.

### 3. Funaria, *Schreb.*

1. F. hygrometrica, *Dill.*

*Hab.* In Himalayæ totæ reg. temp., Sikkim, *J. D. Hooker*! (No. 334, 365). Simla, etc., *T. Thomson*! (No. 333, 338, 340, 342, 363, 371 *b*). Ad flumen Chenab, *T. Thomson*! (No. 330, 337). In Tibet. occid. reg. temp., *T. Thomson*! (No. 350, 351, 353, 357, 358, 360); et in reg. alp. (No. 335, 362). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 343, 349). In Ceylon, *Gardner*.

Tabulæ in *Icon. Plant. Asiat.* ii. t. cix. et cx., evolutionem exhibentes fortasse ad hanc speciem pertinent.

2. F. leptopoda, *Griff. Not.* p. 437.

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! *et J. D. Hooker*! (No. 369); Kumaon, *T. Thomson*! (No. 367), *J. D. Hooker*! (No. 346). In mont. Khasian. in sylvis Myrung, *Griffith*! Etiam in Java, *Junghuhn*!

Species an vere distincta a *F. calvescente* et *F. hygrometrica* sit, vix dijudicare queo; a priore foliis angustis siccitate incurvis subcrispatis differt.

3. F. Nepalensis, *C. Müller, Bot. Zeit.* 1855, p. 748.

*Hab.* In Nepal (*Herb. Kunze*).

4. F. connivens, *C. Müller, Bot. Zeit.* 1855, p. 747.

*Hab.* In mont. Nilghiri, *Perrottet et Schmid.*

5. microstoma, *B. & S.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 332, 354); et in reg. alp. (No. 331, 352).

6. F. Muhlenbergii, *Schw.*

*Hab.* In Himalayæ boreali-occident. reg. temp., *T. Thomson*! (No. 364).

7. F. orthocarpa. Monoica, caule humili, foliis ovatis longiuscule in acumen piliforme acuminatis flaccidis nervo ultra medium evanido marginibus integerrimis, cellulis laxis, perichætialibus ovalibus acuminatis, theca in pedunculo brevi ovali erecta æquali, collo sensim in pedunculum attenuato, operculo conico, calyptra magna, peristomio externo dentibus rubris sublævibus interno processibus filiformibus brevioribus punctulatis.

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* (No. 366).

Species parva, magnitudine *Entosthodonte ericetorum* minor; potius inter *Funarias* posui, quamvis e peristomio ab *Entosthodontibus* non multum recedit.

## § VII. Splachnaceæ.

Voitiaceæ et Splachnaceæ, *Schimp. Coroll.*

### 1. Voitia, *Hornsch.*

1. V. Hookeri (*Mitten*). Monoica, *V. nivali* simillima, foliis sub-

panduriformibus, cellulis minoribus firmioribus oblongis parallelogrammaticis inferne longioribus, theca V. *nivalis*.

V. stenocarpa, *Wils.*, si non *V.* nivalis var. *Wils. l. c.* p. 329.

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 379).

Primo visu *V. nivali* omnino similis, sed foliis panduriformibus et substantia diversa satis distincta.

## 2. Tayloria, *Hook.*

### § 1. *Orthodon*, Brid.

1. T. Indica. (Octoblepharum serratum, *Hook. Musc. Exot.* i. 136, excl. synon. O. serratus, *Bory*.)

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 386, 387, 389). Nepal, *Gardner*! *Wallich*! *J. D. Hooker*! (No. 388). Kumaon, *Strachey et Winterbottom*!

*T. Boryanæ* (*Orthodonti serrato*) simillima, sed calyptra ramentis elongatis sericeis stramineis ornata.

2. T. subglabra. (Orthodon subglaber, *Griff. Not.* p. 399; *Icon. Plant. Asiat.* ii. t. lxxvi. f. 2.)

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 390). "In arboribus vigentibus mortuisve in sylvis Mumbree; in arboribus et rupibus in sylvis Myrung," *Griffith*!

*T. Indicæ, T. Boryanæque* simillima, sed calyptra apice tantum scabra, cæterum glabra.

### § 2. *Dissodon*, Hornsch.

3. T. Jacquemontii (*Schimper, in lit.*). Monoica, caule elongato ramoso, foliis patentibus subtortis obovatis spathulatis obtusiusculis nervo sub apice evanido margine superne subserrato, cellulis laxis marginalibus paulo majoribus pellucidioribus, theca in pedunculo elongato rubro ovali cylindrica collo subnullo erecta, operculo conico, peristomio dentibus octo solidis lævibus, calyptra lævi sporis diametro $\frac{1}{2000}$ unciæ metientibus.

Dissodon Jacquemontii, *Schimper*; *C. Müller, Synops.* i. p. 139.

*Hab.* In Himalayæ occidentalis reg. temp., alt. 9000 ped., loco Deorah secus fontem Gherry, *Jacquemont*!

Species pulcherrima. A *T. Frœlichia*, foliis subtortis et theca cylindrica basi subito in pedunculum angustata, diversa.

4. T. tenella (*Mitten*). Monoica? caule elongato gracili, foliis patentibus elliptico-spathulatis obtusis nervo sub apice evanido margine apice cellulis paululum angustatis indistincte serrato, cellulis laxis oblongis marginalibus paulo majoribus indistincte coloratis, theca in pedunculo breviusculo ovali-cylindrica in collum sensim attenuato, operculo convexo columella adhærente siccatione exserto, peristomio

dentibus octonis pallidis geminatis angustatis erosis, sporis diametro $\frac{1}{600}$ unciæ metientibus.

*Hab.* In Himalayæ occidentalis reg. temp., Kumaon, alt. 9000 ped. ad Champwa, *Strachey et Winterbottom.*

*T. Jacquemontii* habitu foliisque similis, sed dimidio minor, foliis obtusioribus cellulis paululum majoribus, theca in collum sensim attenuata et peristomio teneriore dentibus angulato-erosis.

### 3. Splachnum, *L.*

1. S. urceolatum, *Bryol. Europ.* (Tetraplodon, *B. & S.*)

*Hab.* In Himalayæ orient. reg. alp. et temp., Sikkim, *J. D. Hooker*! (No. 373, 374, 376, 380, 384).

2. S. mnioides, *Hedw.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim., *J. D. Hooker*! (No. 372, 377, 381, 385).

3. S. angustatum, *Linn.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 375).

## § VIII. Bartramiaceæ.

Meesiaceæ, Bryaceæ ex parte, et Bartramiaceæ, *Schimp. Coroll.*

### 1. Meesia, *Hedw.*

1. M. uliginosa, *Hedw.*

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 348).

### 2. Oreas, *Brid.*

1. O. Martiana, *Brid.*

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 571, 591).

### 3. Bartramia, *Hedw., Brid.*

1. B. pomiformis, *Hedw.*, var. crispa.

*Hab.* In Himalayæ occidentalis reg. temp., ad flumen Chenab, *T. Thomson*! (No. 605).

2. B. Halleriana, *Hedw.*

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 590, 595). Kumaon, *Royle*!

*Folia* magis crispata sunt quam in forma vulgari; cæteroquin non diversa.

3. B. subulata, *B. & S. Bryol. Europ.*

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 570).

4. B. leptodonta (*Wils. l. c.* p. 369). Monoica synoicave, caule subsimplici, foliis e basi oblonga superne dilatata erecta cellulis elon-

gatis pellucidis areolata subito subulato-lanceolatis, cellulis minoribus viridibus subobscuris, dorso papilloso-erosis nervo excurrente carinatis margine minute dense serrulatis, perichætialibus conformibus, theca in pedunculo elongato globosa erecta subinclinatave leptodermi lævi siccitate corrugata, ore parvo, operculo plano-convexo, peristomio externo dentibus rubris interno carente.

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 573). Kumaon, *Strachey et Winterbottom*!

Habitu colore staturaque *B. ithyphyllæ* similis, sed foliis basi duplo latioribus et superne nervo distincto, marginibus densius serrulatis, cellulis in parte superiore minus obscuris, et theca non plicata, peristomio simplici externo.

5. B. SUBPELLUCIDA (*Mitten*). Synoica, *B. ithyphyllæ* simillima et foliis ejusdem formæ, sed nervo ubique distincto, marginibus argutius et densius serrulatis ad basin partis superioris reflexis, cellulis oblongis subpellucidis, perichætialibus conformibus, theca in pedunculo elongato inclinata globosa plicata, peristomio *B. ithyphyllæ*.

*Hab.* In Himalayæ reg. temperata, ad Kumaon, *Strachey et Winterbottom*. In Nepal orient. ad flumen Ratong, fragmentum tantum, *J. D. Hooker*!

*B. ithyphyllæ* persimillima, sed foliis siccitate minus strictis et structura partis superioris cellularum iis *B. ithyphyllæ* dimidio brevioribus et latioribus subpellucidis, nervo ubique distincto statim dignoscendum. *Theca* et *peristomium*, quantum e speciminibus fructu vetusto discerni potest, iis *B. ithyphyllæ* similia.

## 4. PHILONOTIS, *Brid.*

1. P. Roylei, *Mitten*. (Glyphocarpus, *Hook fil.*; *Hook Icon. Plant. Rar.* t. 194 *c.*)

*Hab.* Himalaya occident., *Royle*. In mont. Nilghiri, *Perrottet*! *Schmid*!

2. P. GRIFFITHIANA (*Mitten*). Dioica? cæspitosa, caule sub perichætio ramis pluribus innovante, foliis erecto-patentibus ovatis longe acuminatis nervo in apice evanido dorso dentato marginibus serrulatis recurvis, cellulis elongatis angustis basi parum latioribus papillosis, perichætialibus hastatis acuminatis, theca in pedunculo rubro elongato globosa lævi sicca vix sulcata, operculo plano umboneve minuto, peristomio externo dentibus brevibus rubris interno brevissimo rudimentario.

Bartramia Griffithiana, *Wils. in Sched.* (Weissia Bartramioides, *Griff. Not.* p. 407; *Icon. Plant. Asiat.* ii. t. lxxviii. f. 3.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 574, 593, 596, 611, 616). In mont. Khasian., *Griffith*! reg. temp., *J. D. Hooker et T. Thomson*! (No. 560, 603).

Glauco-viridis, habitu staturaque *P. filiformis* (*Bartramia*, Hsch.), sed paululum robustior. Species theca lævi peristomate erecto trans-

itum *Bartramidularum* in *Philonotem* pulchre ostendens, et a reliquis affinibus jam distincta.

Florescentia fide Griffithii synoica; sed antheridia frustra quæsivi.

3. P. GLOMERATA (*Mitten*). Dioica, cæspitosa, planta mascula caule gracili ramoso, foliis strictis imbricatis appressis anguste ovatis acuminatis nervo crassiusculo excurrente margine recurvo serrulato, cellulis superne angusto-oblongis distinctis inferne abbreviatis subquadratis perigonialibus in gemmam superne apertam imbricatis late ovatis brevi acuminatis internis suborbiculatis vix apiculatis tenuiter nervatis.

Bartramia glomerata, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* ! (No. 597).

Statura modoque imbricationis foliorum *P. imbricatulæ* similis, a qua foliis cellulis firmioribus luteis, et forma perigonialium minus elongata recedere videtur. Cellularum forma convenit.

4. P. LEPTOCARPA (*Mitten*). Dioica, gregaria, caule brevi gracili, foliis strictis erectis lanceolato-subulatis planis, nervo longe excurrente parce denticulato, marginibus serrulatis angustissime vel non recurvis, cellulis elongato-oblongis laxis basi laxioribus pellucidis, perichætialibus longioribus nervo longiore excurrente, theca in pedunculo rubro gracili globosa inclinata leptodermi plicata, operculo obtuse conico, peristomio dentibus breviusculis latis interno ciliis carente lævi.

Bartramia mollis, var., *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, alt. 12,000 ped. *J. D. Hooker* ! (No. 610).

*Caulis* bi- quadrilinearis. Gracilis, *P. Roylei* non dissimilis, foliis e basi æquilatis pro spatio longitudine bis latitudinem æquante, cellulis laxis, deinde sensim lanceolato-subulatis teneris, nervo longe excurrente et quamvis undulato directione stricta.

A *P. molli* (*Bartramia*, Dozy et Molk.), statura longe minore, foliis strictis rigidulis erectis appressis, valde diversa.

5. P. THWAITESII (*Mitten*). Dioica, cæspitosa, caule brevi, foliis patentibus subsecundis ovato-lanceolatis nervo excurrente marginibus recurvis serrulatis, cellulis minutis breviter oblongis superne obscuris, perichætialibus longioribus angustioribus, theca in pedunculo elongato globosa inclinata plicata, operculo breviter conico obtuso, peristomio dentibus breviusculis latis interno ciliis nullis processibus angustis apicibus striatulis, flore masculo foliis perigonialibus ovatis longe lanceolatis acuminatis.

*Hab.* In Ceylon, *Thwaites* ! *Caulis* tri- sexlinearis. *Pedunculus* biuncialis. *Folia* densiuscula statu sicco appressa paululum flexuosa. Habitu *P. Griffithianæ* similis, sed foliis minus rigidis et theca inclinata gibba et plicata. *P. filiformi* etiam similis, sed foliis tenuioribus et angustioribus.

6. P. SUBULOSA (Bartramia, *Griff. Not.* p. 438; *Icon. Plant. Asiat.* ii. t. 101. f. 2). Dioica, cæspitosa, habitu *P. Turnerianæ*, foliis erectis strictis appressis lanceolatis longiusculis angustis planiusculis nervo crassiusculo longe excurrente marginibus anguste recurvis serrulatis, cellulis elongatis basi latioribus, perichætialibus nervo longius excurrente, theca in pedunculo elongato globosa sulcata, operculo convexo, peristomio dentibus rubris, interno ciliis carente, flore masculo foliis perigonialibus e basi oblonga erecta lanceolatis patulis.

*Hab.* "In montibus Khasia, ripis arenosis rivuli Maamloo, Deboro et Rangagurrah agri Singfoensis," *Griffith*!

*P. Turneriana* gracilior, foliis densioribus strictioribus appressis, non profunde carinatis, angustis.

Plantula illa, a beato Griffithio pro var. A. memorata, mihi non visa; sed sub hoc nomine specimen parvulum *Leptotrichi* cujusdam *L. pomiformi* affinis, a Griffithio missum, in Herb. Wardiano asservatum est.

7. P. ANGUSTA (*Mitten*). Dioica, cæspitosa, foliis erecto-patentibus sæpe subsecundis ovato-lanceolatis nervo excurrente marginibus serrulatis, cellulis elongatis basi oblongis, perichætialibus e basi late ovata subulatis, theca in pedunculo elongato magna globosa plicata, operculo convexo, peristomio interno processibus lævibus.

B. prætenuis *et* B. angustata, *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner* (No. 601, 615). In Himalayæ orient. reg. temp. (non omnino cum speciminibus Ceylanicis congruens), Sikkim, *J. D. Hooker*! (No. 607).

Habitu staturaque *P. imbricatulæ*, foliis autem minus hastatis et cellulis longioribus basi non quadratis sed oblongis, perichætialibus subulatis et peristomio interno, e fragmentis, lævi. *Theca* pro plantula satis magna. *Substantia* tenera.

8. P. IMBRICATULA (*Mitten*). Dioica, caule brevi, foliis imbricatis erectis ovatis breviter lanceolatis sensim angustatis non acuminatis nervo excurrente marginibus recurvis serrulatis, cellulis basi quadratis superne oblongis distinctis, perichætialibus longioribus subulato-attenuatis, theca in pedunculo elongato horizontali gibba plicata, operculo breviter conico, peristomio dentibus brevibus latiusculis interno ciliis nullis processibus apice striatulis, sporis reniformibus, flore masculo foliis perigonialibus ovatis subulatis.

Bartramia Griffithiana ex parte, et B. tenella, *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner*! (No. 609, 613, 616).

*P. filiformi* statura colore dispositioneque foliorum affine, sed foliis basi ad angulos cellulis abbreviatis quadratis superioribus oblongis.

9. P. laxissima. (Bartramia, *C. Müller, Syn.* i. p. 480.)

*Hab.* In Assam, *Griffith*!

10. P. HETEROPHYLLA (*Mitten*). Dioica, cæspitosa, gracilis, foliis patentibus e basi oblonga lanceolatis nervo excurrente dorso marginibusque recurvis argute serrulatis, cellulis conformibus basi parum

latioribus oblongis teneris pellucidis, perichætialibus e basi late ovata longe subulatis, theca in pedunculo gracili globosa gibba plicata, operculo convexo breviter conico, peristomio dentibus brevibus interno processibus apice punctulatis ciliis rudimentariis, planta mascula foliis ovalibus obtusiusculis nervo vix excurrente, perigonialibus e basi suborbiculari subulato-lanceolatis erectis.

Bartramia tenella, var., *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner* (No. 616) *et Thwaites?*

A *P. tenella*, si synonymon *P. filiformis* verum sit, distinctissima, et *P. laxissimæ* similis, sed foliis angustioribus longioribus lanceolatis tenuiter acuminatis argutius serrulatis. Forma foliorum caulinorum plantæ masculæ iis *Bryi albicantis* similis.

11. P. macrocarpa. (Bartramia, *C. Müller, Bot. Zeit.* 1853, p. 57.)

*Hab.* In mont. Nilghiri, *Schmid.*

12. P. NITIDA (*Mitten*). Dioica, *B. Turnerianæ* similis, sed foliis patentibus lanceolatis planis nervo angusto excurrente apice læviusculo marginibus serrulatis inferne anguste recurvis, cellulis omnibus elongatis angustis perichætialibus e basi ovata subulatis, theca in pedunculo elongato gracili rubro globosa gibba inclinata plicata, operculo convexo mammillato, peristomio in speciminibus immaturis normali?

Bartramia nitida, *Wils. l. c.* p. 370.

*Hab.* In Himalayæ boreali-occident. reg. temp., *Royle*! *et T. Thomson*! (No. 561).

*P. Turnerianæ* statura habituque maxime sinilis, sed foliis siccitate strictis patentibus haud appressis et seriatis, minus obscuris subnitentibus, cellulis angustis longioribus.

13. P. Turneriana. (Bartramia, *Schw.* t. 238. — Bartramia fontana *β.* marchica, *Griff. Not.* p. 437.—B. nitida, *Wils. in Sched.* quoad No. 561.)

*Hab.* Per Himalayæ reg. temp., Sikkim, vulgaris, *J. D. Hooker*! (No. 561, 563, 565, 569, 575, 576, 577, 582, 583, 598, 599, 600, 601, 616, 617). In Nepal, *Wallich*! Kumaon et Simla, *Strachey et Winterbottom*! *T. Thomson*! (No. 561). In mont. Khasian., ad Boga Panee, *Griffith*!

A *P. falcata*, quacum foliis seriatis convenit, nervo longe in acumen piliforme attenuato distinguenda.

14. P. pseudofontana (Bartramia, *C. Müller, Bot. Zeit.* 1856, p. 418).

*Hab.* In mont. Nilghiri, *Schmid*!

Ex descriptione, a *P. Turneriana* non discrepat.

15. P. falcata. (Bartramia, *Hook. Trans. Linn. Soc.* ix. t. 27.—B. gonioclada, *Wils. l. c.* p. 369.—B. angustata ex parte, *ejusd. l. c.*)

*Hab.* In Himalayæ, reg. temp., Sikkim, *J. D. Hooker*! (No. 602).

Nepal, *Wallich*! Kumaon, *Strachey et Winterbottom*! *T. Thomson*! (No. 618); et Tibet. occ. reg. temp., *T. Thomson*! (No. 562, 567, 604). Mont. Nilghiri, *Perrottet*!

Species foliis imbricatis in seriebus quinque dispositis sensim a basi angustatis nec ovatis nec acuminatis, nervo profunde carinatis et cellulis oblongis omnibus fere conformibus distinctis, facillime a consimilibus distinguenda. A *P. Marchica*, quacum fere omnibus partibus cellulisque convenit, foliis profunde carinatis et seriatis recedere videtur.

*Obs.* Adest species quædam Europæa hactenus prætervisa, *P. falcatam* dispositione foliorum seriata valde simulans, quamvis quoad formam *P. fontanæ* affinior.

16. P. SERIATA (*Mitten*). Dioica, *P. fontanæ* simillima, foliis erectis subfalcatisve imbricatis in apicibus ramorum seriatis late ovatis acuminatis nervo crasso in apice evanido margine serrulato inferne revoluto, cellulis basi parvis brevioribus subobscuris.

Bryum lycopodiiforme, *Schleich. MSS.*

*Hab.* In Helvetia, *Schleicher*! sterilis. In Britannia boreali in monte Ben-na-Bourd, *W. Gardiner*!

Specimina Schleicheriana sterilia (forma adventitia) innovationes breves foliis julaceo-imbricatis spicis *Lycopodii annotini* instar produnt. Species quamvis *P. fontanæ* valde affinis, structura foliorum partis inferioris certe distincta.

17. P. fontana, *Brid.* (Bartramia crassinervis, ex parte, *Wils. in Sched.*)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 586). In Tibet. occid. reg. temp. et alp., *T. Thomson*! (No. 559, 564, 568, 606).

18. P. calcarea. (Bartramia, *Bruch et Schimp.*—Bartramia crassinervis, ex parte, *Wils. l. c.* p. 370.)

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 606, 618). In Himalaya boreali-occident., *Royle*!

Species nervo crassiore et cellulis amplioribus a *P. fontana* facile discernenda.

19. P. LUTEA (*Mitten*). Dioica, cæspitosa, caule elongato ramoso inferne fusco tomentoso, foliis erecto-patentibus subsecundis late ovatis basi biplicatis acumine lanceolato nervo tenuiusculo excurrente margine recurvo basi reflexo serrulato, cellulis superne elongatis angustis basi parum latioribus, perigonialibus e basi latissima laxa erecta breviter acuminatis acutis patulis.

Bartramia uncinata, *Wils. l. c.* p. 370.—B. crassinervis, ex parte, *ejusd. l. c.* p. 370.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 578, 579, 584, 587).

Habitu staturaque *P. fontanæ* et *P. calcareæ* similis, a priore foliis

mollibus tenerioribus, cellulis distinctioribus, nervo angustiore et ambitu longiore; a secundo, cellulis magis affinis, nervo autem longe angustiore statim dignoscitur. A *P. uncinata* longe diversa.

20. P. SPECIOSA (Bartramia, *Griff. Not.* p. 439; *Icon. Plant. Asiat.* ii. t. 101. f. 1). Dioica, cæspitosa, caule brevi, foliis laxis patentibus concavis ovato-lanceolatis apice semitortis nervo tenui excurrente carinatis marginibus basi tantum recurvis minute serrulatis, cellulis angustissimis elongatis ad angulos paucis oblongis, perichætialibus lanceolato-subulatis, theca in pedunculo elongato globosa gibba inclinata plicata, peristomio dentibus brevibus interno processibus apice punctulatis ciliis duobus irregularibus interpositis.

*Hab.* In mont. Khasian. in ripis arenosis, *Griffith*! In Nepal, *Wallich*! *Rami steriles* sesquiunciales crassiuscule plumosi, foliis siccis humidisque patentibus; *fertiles* breves semunciales, pedunculo unciali. *Theca* magna.

Species distinctissima crassitudine ramorum, *Bartramiæ tomentosæ* similis.

21. P. longicollis, *Hampe.* (B. Hookeri, *Wils. l. c.* p. 369.—B. dicranoidea, *ejusd. l. c.* p. 369.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 580, 581, 583, 585, 594).

## 5. BREUTELIA, *Schimp.*

1. B. INDICA (*Mitten*). Caule elato ramoso tomentoso, foliis nitidis e basi erecta subquadrata superne dilatata divaricatis subulato-lanceolatis acuminatis inferne plicis angustis exaratis apice subtortis nervo tenui excurrente marginibus serrulatis, cellulis basi utrinque ad latera majoribus in serie unica dispositis cæterum omnibus conformibus angustis elongatis papillosis, perichætialibus erectis apice latioribus nervo evanescente, theca in pedunculo brevi apice curvato globoso-pyriformi plicata horizontali.

*Hab.* In mont. Nilghiri, *Gardner*. In Himalayæ orient. reg. alp. (forma minor foliis magis deflexis = *B. deflexa*, Wils. in Sched.), Sikkim, *J. D. Hooker*! (No. 592).

*B. giganteæ* ex icone Schwægr. similis, sed foliis densioribus. *Pedunculus* trilinearis gracilis. *Peristomium*, quantum in thecis vetustis observari potest, normale.

2. B. dicranacea. (Bartramia, *C. Müller, Bot. Zeit.* 1853, p. 57.)

*Hab.* In mont. Nilghiri, *Schmid*!

Structura foliorum, e descriptione, a *B. Indica* diversa.

## § IX. Bryaceæ.

**Mielichoferiacaceæ et Bryaceæ ex parte, *Schimp. Corol.***

### 1. Orthodontium, *Schw.*

1. O. infractum, *Dozy et Molk. Musc. Archipel. Ind.*, fasc. ii. p. 34, t. xiv.

*Hab.* In Ceylon, *Maxwell*!

### 2. Mielichoferia, *Hornsch.*

1. M. Himalayana (*Mitten*). Dioica, cæspitosa, caule elongato dichotomo inferne fusco-radiculoso, foliis patentibus inferioribus lanceolatis ovato-lanceolatisve nervo excurrente mucronatis margine apice parce denticulatis, superioribus latioribus in planta mascula ovatis, nervo excurrente piliformi, marginibus angustissime reflexis, cellulis laxis flaccidis, perichætialibus parum longioribus, theca in pedunculo breviusculo pyriformi, operculo convexo-conico, peristomio dentibus angustissimis hyalinis, flore masculo capituliformi foliis internis brevibus.

*Hab.* In Himalaya occidentali temperata, Kumaon ad Pindari, alt. 11,000 ped., *Strachey et Winterbottom*!

*M. nitidæ* var. *compactæ* statura similis, sed foliis flaccidioribus angustioribus cellulis elongatis.

*Obs.* Muscus ex Himalayæ orient. reg. temp., *J. D. Hooker*! (No. 471), fortasse species alia hujus generis est.

### 3. Webera, *Hedw.*

1. W. elongata. (Bryum, *Dicks.*)

*Hab.* In Himalayæ reg. temp. et alp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 474, 475, 476, 478, 479, 484, 485, 486, 488, 489, 491, 503, 544, 549 *b*, 550, 554), Simla, &c., *T. Thomson* ! (No. 494, 504, 549).

2. W. polymorpha, *Schimp.*

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 442, 469, 556).

3. W. rigescens (*Mitten*). Dioica? caule erecto, foliis patentibus e basi latiuscula subulato-lanceolatis, margine basi decurrente fere ad apicem acutum reflexo integerrimo denticulatove, nervo crassiusculo rubro excurrente, cellulis elongatis angustis, perichætialibus erectis apice angustioribus.

Bryum rigescens, *Wils. l. c.* p. 366.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 443).

*W. elongata* robustior, foliis basi latioribus sensim subulato-lanceolatis et margine ad apicem reflexo distincta.

4. W. HIMALAYANA (*Mitten*). Monoica, caule elongato cæspitoso innovationibus ramoso, foliis inferioribus innovationumque patentibus ovatis acutis, nervo subexcurrente, marginibus apice indistincte parce denticulatis a basi ad axillam folii inferioris utrinque decurrentibus, cellulis elongatis chlorophyllosis subindistinctis comalibus duplo longioribus lanceolatis apice latiusculis margine a basi ad ultra medium reflexo apice serrulatis, nervo excurrente, theca in pedunculo elongato claviformi subarcuata, peristomio *Pohliæ* ciliis carentibus, flore masculo in innovatione terminali vel repetitione innovationis laterali foliis exterioribus caulinis similibus interioribus orbiculatis concavis apiculo brevi terminatis.

Bryum acuminatum, *Wils. l. c.* p. 332.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 477).

*W. elongatæ* et *W. acuminatæ* habitu staturaque affinis, sed ab utraque foliis cellulis fere dimidio brevioribus marginibus decurrentibus et floris masculi structura diversa.

5. W. flexuosa. (Pohlia, *Hook.*—Brachymenium microstomum, *Harvey, Hook. Icon. Plant. Rar.* t. 19. f. 4.)

*Hab.* In Himalayæ orient. et cent. reg. temp., Nepal, *Wallich* ! Sikkim, *J. D. Hooker* ! (No. 495, 496, 497, 498, 525).

6. W. DELICATULA (*Mitten*). Dioica? caule erecto sub perichætio innovante, foliis laxis patentibus ovato-lanceolatis apice acuminatis acutis, nervo excurrente, margine superne remote serrulato a basi ad folii inferioris axillam decurrente, cellulis elongatis angustis, perichætialibus erectis longioribus, theca in pedunculo elongato gracili obovata flexura colli abrupte pendula, operculo conico acuminato, peristomio *Pohliæ*.

B. delicatulum, *Wils. l. c.* p. 332.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 481, 483). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* ! (No. 509).

*W. annotinæ et W. albicantis* formis gracilioribus similis, sed theca abrupte inclinata.

7. W. albicans. (Bryum, *Wahl.*)

*Hab.* Var. *speciosa,* In Tibet. occid. reg. alp., *T. Thomson* ! Var. *glacialis,* in Tibet. occid. et in Himalayæ boreali-occident. reg. temp., *T. Thomson* ! (No. 402, 406, 407, 421).

8. W. pyriformis, *Hedw.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* ! (No. 448).

9. W. cruda, *Schw., Griff. Icon. Plant. Asiat.* ii. t. 91. f. 4.?

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 499). In mont. Khasian., in pinetis ad Moflong, *Griffith*?

Anne planta Griffithiana species vera sit, an potius ad *W. elongatam* pertinens speciminibus non visis non dijudicare volui.

## 4. Bryum, *Dill.*

1. B. FILIFORME (*Mitten*). Dioicum, caule innovante ramoso gracili, foliis erectis aureo-nitidis filiformi-imbricatis late ovatis concavis apice obtusiusculis acutis subcrenulatis integerrimisve, nervo ad $\frac{3}{4}$ evanido, cellulis basi et ad folii tertiam partem longitudinis laxis amplis superioribus angustissimis elongatis, perichætialibus superne angustioribus, theca in pedunculo gracili elongato elliptica erecta horizontalive, operculo brevi conico, peristomio *Brachymenii*.

Brachymenium filiforme, *Griff. Not.* p. 443; *Icon. Plant. Asiat.* ii. t. 102. f. 2.

*Hab.* In mont. Khasian., *Griffith*! In reg. temp., *J. D. Hooker et T. Thomson*! (No. 522, 523, 536, 539). In Himalayæ reg. temp., Sikkim, *J. D. Hooker*! (No. 518, 535). Nepal, *Wallich*! Kumaon, *Royle*!

Statura *B. julaceo* et *B. prostrato* intermedia. *Color* pulchre aureo-nitens.

2. B. AURATUM (*Mitten*). Dioicum, cæspitosum, caule foliis erectis arcte imbricatis filiformi julaceo, foliis suborbiculatis obtusiusculis concavis nervo tenui ad $\frac{3}{4}$ evanido integerrimis apice tantum suberosis, cellulis basi laxis amplis sensim superne angustatis, perichætialibus ovatis triangularibus obtusiusculis, theca in pedunculo elongato gracili horizontali angusto-elliptica, operculo conico-rostrato, peristomio dentibus rubris interno processibus angustis brevibus rudimentariis in membrana alte exserta.

Brachymenium filiforme, ex parte, *Wils. l. c.* p. 363.

*Hab.* In Himalaya centrali et orientali, Nepal, *Wallich*! *J. D. Hooker*! (No. 513, 519).

*B. filiformi* primo adspectu maxime simile, sed foliis fere duplo latioribus cellulis ad eorum apices duplo triplove latioribus et operculo rostrato.

3. B. NITIDUM (*Mitten*). Dioicum, caule simplici tereti, foliis erectis imbricatis late ovatis acutis concavis nervo in mucronem parvulum excurrente integerrimis, cellulis basi laxis sensim superne angustioribus apice angustis flexuosis, perichætialibus angustioribus, theca in pedunculo elongato cernua oblonga macrostoma, peristomio dentibus longiusculis interno normali *Bryi* in membrana altiuscula.

*Hab.* In Himalayæ reg. temp., Sikkim (inter cæspites *Anthocori tuberculati*), *J. D. Hooker*! Simla, *T. Thomson*! Inter muscos varios fragmenta carpsi.

Habitu staturaque *B. filiformi* non dissimile, foliis tamen mollioribus minus arcte julaceo-imbricatis.

4. B. Weissiæ. (Brachymenium, *Hook.*—B. bryoides, *Schw.* t. 135.—Bryum exile, *Dozy et Molk. Musc. Archip. Ind.* t. 5.—B. Nepalense *Spreng., C. Müller, Synops.* i. p. 311.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Simla, *T. Thomson*! (No. 524). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! et Nilghiri, *Perrottet*! *Schmid*!

5. B. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 24.

*Hab.* In mont. Nilghiri, *Schmid.*

6. B. Harveyanum, *C. Müller, Synops.* i. p. 313. (Brachymenium acuminatum, *Harvey.*—B. cuspidatum, *Griff. Not.* p. 442; *Icon. Plant. Asiat.* t. 102. f. 1.)

*Hab.* In Penang, *Wallich*! In mont. Khasian., ad Myrung, *Griffith*; in reg. temp. (B. *Weissiæ*, consociatum), *J. D. Hooker et T. Thomson*! (No. 521). In mont. Nilghiri, *Schmid*!

De planta Griffithiana non omnino certus sum, sed ex icone et descriptione huc referenda est.

7. B. flaccidisetum, *C. Müller, Bot. Zeit.* 1853, p. 23.

*Hab.* In mont. Nilghiri, *Schmid*!

E. descriptione vix a *B. Harveyano* differt.

8. B. MICANS (*Mitten*). Dioicum? caule brevi tereti, foliis imbricatis ovatis acutis nervo luteo latiusculo sub apice evanido vel in cuspidulam excurrente margine superne serrulatis, cellulis basi et pro tertia folii longitudinis parte laxis suboblongis cito in angustas superne subflexuosas transeuntibus, perichætialibus e basi latiore lanceolatis structura conformibus, theca in pedunculo elongato flexuoso *B. Weissiæ*, annulo composito, peristomio *Brachymenii*? operculo conico-obtuso.

*Hab.* In India orientali, *Greville* (in Herb. *Gardner*!).

*B. Weissiæ* habitu adspectuque simile, structura autem foliorum diversum.

*B. nitido* foliis minus concavis serrulatis, et theca peristomioque *Brachymenii*? Peristomium internum non inveni.

A *B. filiformi* et affinibus foliis acutis refugit.

9. B. EXTENUATUM (*Mitten*). Synoicum, cæspitosum, caule humili ramoso, foliis patentibus laxe imbricatis ovali-acuminatis concavis nervo in mucronem excurrente margine integerrimis indistincteve dentatis, cellulis laxiusculis marginalibus uni- vel biseriatis angustis, perichætialibus longioribus lanceolatis rigidis, theca in pedunculo elongato ovali erecta, operculo conico-curvirostrato brevi, peristomio *Brachymenii* processibus angustis, annulo lato composito.

*Hab.* Carnatic ad Negapatam, *Wight*!

*B. Weissiæ* proximum, foliis autem longioribus et inflorescentia synoica diversum.

10. B. argenteum, *Linn.*

*Hab.* In Himalayæ totius reg. temp. et alp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 470, 517, 537, 541, 542, 543, 554, 555). Simla, *T. Thomson*! (No. 540? 546, 552). In Ceylon, *Gardner* (No. 511, 514, 515, 533, 534). In mont. Nilghiri, *M'Ivor*! *Gardner*! *Schmid*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 520).

11. B. ALBULUM (*Mitten*). Dioicum? albidum, caule brevi, foliis compacte imbricatis quinquefariis ovatis apice obtusiusculis nervo paulo ultra medium evanido integerrimis, cellulis in folii dimidio inferiore parvis oblongis subparallelogrammaticis pallide viridibus, in dimidio superiore elongatis acutis laxis hyalinis, perichætialibus ovato-lanceolatis, theca in pedunculo elongato rubro brevi-ovali pendula basi rugosa, peristomio *Bryi*? processibus in membrana altiuscula.

*Hab.* In peninsula Indiæ orient., *Greville* (in Herb. *Gardner*!).

*Color* glauco-albidus. Habitu staturaque *B. argentei*, a quo et affinibus foliis quinquefarie dispositis satis recedit. *Pedunculus* uncialis sesquiuncialisque, crassiusculus, rubro-fuscus.

12. B. coronatum, *Schw.*

*Hab.* In Nepal? *Wallich*! In Ceylon, *Gardner* (No. 432, 433).

Specimina ex Java accepi sub nomine *B. dolioli*, Duby; sed in his et Indicis peristomium internum ciliis appendiculatis et florescentia dioica a forma Americæ meridionalis non discrepant.

13. B. hemisphæricarpum, *C. Müller*, *Synops.* ii. p. 576.

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 464). Kumaon, *Strachey et Winterbottom*!

14. B. COGNATUM (*Mitten*). Synoicum, habitu staturaque *B. sanguinei*, foliis latioribus, cellulis duplo latioribus utriculo primordiali serpentino repletis, peristomio interno processibus late pertusis ciliis in unum coalitis valde appendiculatis in membrana ad dentium dimidium exserta, annulo lato composito.

*Hab.* In Ceylon, *Gardner*! (No. 512). Nudo oculo *B. sanguineo* persimile, sed florescentia peristomio et structura foliorum distinctum.

15. B. rubens, *Mitten in Hook. Journ. of Bot.* 1856, p. 232.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 427, 482). In Assam, *Griffith*!

16. B. Montagneanum, *C. Müller*, *Synops.* i. p. 265.

*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid*!

17. B. rugosum, *C. Müller*, *Bot. Zeit.* 1853, p. 23.

*Hab.* In mont. Nilghiri, *Schmid.*

18. B. pachytheca, *C. Müller*, *Synops.* i. p. 307.

*Hab.* India orientalis (Herb. *Gottsche.*).

19. B. FULVELLUM (*Wils. l. c.* p. 330). Dioicum, pusillum, cæspi-

tosum, caule brevissimo innovationibus pluribus ramoso, foliis patentibus ovatis, nervo in acumen longiusculum excurrente, marginibus subintegerrimis, cellulis inferne elongatis angustis superne subflexuosis, perichætialibus ovato-lanceolatis, theca in pedunculo gracillimo rubro ovata microstoma pendula, operculo parvo conico, peristomio *Ptychostomi*, annulo composito.

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* ! (No. 439).

Species parvula pulchella. *Caulis ramique* altitudine lineari. *Folia* lutescentia. *Pedunculus* 4–8-linearis. *Theca* parva pallide fusca. Structura peristomii *B. cernuo* simile, sed foliorum structura aliena, et *Bryis B. Weissiæ* similibus affinius.

20. B. ERYTHRINUM (*Mitten*). Dioicum, caule breviusculo ramoso, foliis patentibus anguste ovatis lanceolatis concavis, nervo rubro in mucronem brevem excurrente, margine integerrimo apiceve parce denticulato, cellulis laxis amplis marginalibus in serie unica angustis, perichætialibus lanceolatis, theca in pedunculo elongato horizontali pendula vel clavata, ore magno, operculo conico, peristomio *Bryi*.

B. pachypoma, *Wils. l. c.* p. 364, ex parte.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 473, 535).

Color totius plantæ ruber, apicibus ramorum tantum subviridibus. *Folia* siccitate appressa nitoris destituta, ambitu angusto illis *B. sanguinei* similia, sed cellulis multo laxioribus. Theca *B. sanguinei*, sed ore majore. A *B. rubente* foliis angustioribus magis ovato-lanceolatis margine tenuiore et cellulis longioribus recedit.

21. B. porphyrioneuron, *C. Müller, Bot. Zeit.* 1853, p. 22.

*Hab.* In mont. Nilghiri, *Schmid.*

22. B. nitens, *Hook. Icon. Plant. Rar.* t. 19. f. 6. (B. pachypoma, *Mont.*—B. apiculatum, *Schw. Supp.* t. 72.—B. coronati var., *Wils. l. c.* p. 333.)

*Hab.* In Nepal, *Wallich* ! In Ceylon, *Gardner* ! (No. 431). Etiam in Java (Hb. *Miquel*).

Icon Hookeri supra citata mala, quod folia e musco alieno desumpta.

Species, neglecta foliorum structura, cum *B. alpino* commutata, cellulis autem longioribus, marginalibus vix serie unica distincta, certe aliena, præterea statura minore et pedunculi flexura late arcuata.

23. B. alpinum, *Linn.* (B. teretiusculum, *Hook. Icon. Plant. Rar.* t. 20. f. 1.—B. pachypoma, *Wils. l. c.* p. 364, ex parte.)

*Hab.* In Himalayæ tot. reg. temp., Nepal, *Wallich* ! *J. D. Hooker* (No. 430, 490); Sikkim, *J. D. Hooker* (No. 429, 436, 447, 453, 468, 480, 500, 530). Simla et Kishtwar, *T. Thomson* ! (No. 452, 461). In Tibet. occid. reg. temp., *T. Thomson* ! (No. 454). In mont. Nilghiri, *M'Ivor*. In collibus Jyntea, *J. D. Hooker et T. Thomson* ! (No. 435). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* ! (No. 434, 478).

Foliorum forma et structura speciminum Indicorum omnibus notis cum planta Europæa conveniunt. *Theca* interdum collo brevi=*B. tereti-usculum*. *Folia* minime variant neque forma neque cellularum structura, margine basi utrinque decurrente, cellulis basi ad nervum in foliis vetustioribus fusculis pro spatio brevi protractis, qua nota per variationes omnes distinguitur.

24. B. cernuum, *B. et S.* (B. fulvellum, ex parte; B. pumilum; B. subrotundum; B. pallescens, var.; B. viridans; B. inclinatum, var., et B. intermedium, var., *Wils. l. c.* pp. 330, 331.)

*Hab.* In Himalayæ reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 438, 440, 441, 444, 445, 446, 462, 463, 501, 502). Simla, *T. Thomson*! (No. 180, 440 *b*, 449, 451, 453, 465).

Hæc omnia supra enumerata ad speciem unam parum variantem reduxi. *Florescentia*, ut mos est muscorum monoicorum, sæpe confluentia florum synoica. Specimina floribus masculis in ramulo proprio segregatis e montibus Helvetiæ in summo montis Gemmi, a cl. Schimper accepi, et in Britannia ipse legi, floribus autem fertilibus absque antheridiis non observavi. Species, ut specimina plura elucent, per totam hemisphæram borealem plana et alpina usque ad regiones ulteriores arcticas adscendens. *Peristomium* tantillum variat, nunc interno externo omnino adglutinato, nunc fere libero.

25. B. lacustre, *Brid.* (B. fulvellum, ex parte, *Wils. l. c.* p. 330.)

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker*! (No. 428).

26. B. calophyllum, *Brown.* (B. latifolium, *Bryol. Europ.*—B. pallens, var., *Wils. l. c.* p. 366.)

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 426).

Specimina hæc ab originalibus, foliis breviter nervo excurrente apiculatis, discrepant, cæterum aspectu plantæ in statu sicco et structura foliorum omnino conveniunt. Observationes inter *B. calophyllum* et *B. Warneum*, si in loco natali unum in alterum transeat, desiderantur. A *B. pallente* florescentia jamjam distincta.

27. B. Warneum, *Bland.*

*Hab.* In Himalayæ occidentalis reg. temp., Kumaon, *Strachey et Winterbottom.*

28. B. cæspiticium, *Linn.*, *Griff. Icon. Plant. Asiat.* ii. t. 91. f. 5. (B. pachypoma, ex parte, *Wils. l. c.* p. 364.)

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson* (No. 418, 425, 437, 450, 455, 457). Kashmir, *T. Thomson* (No. 493). In mont. Khasian., ad rupes et arborum truncos (an species vera?), *Griffith.*

29. B. lamprostegum, *C. Müller, Bot. Zeit.* 1853, p. 22.

*Hab.* In mont. Nilghiri, *Schmid.*

30. B. subrotundum, *Brid.* (B. pumilum, ex parte; B. cæspiticium, et B. cernuum, *Wils. l. c.* p. 331.)

*Hab.* In Himalayæ occidentalis reg. temp., Jamu, *T. Thomson* (No. 466); et in Tibet. occid. reg. alp., *T. Thomson* ! (No. 431, 467).

*Peristomium*, in specimine No. 467, ciliis appendiculatis *Bryi* !

31. B. TIBETANUM (*Mitten*). Monoicum, compacte cæspitosum, humile, *B. cæspiticio* simillimum, foliis late ovatis ovato-lanceolatisque acutis acuminatisve nervo in mucronem brevem excurrente marginibus apicem versus subserrulatis inferne subrecurvis, cellulis inferioribus oblongis superioribus prosenchymaticis, perichætialibus brevioribus orbiculari-acuminatis, theca in pedunculo elongato pendula ei *B. cæspiticii* simili, operculo conico, peristomio interno processibus e ciliis in unum coalitis æquilongis lævibus in membrana ad dimidium fere dentium exserta, annulo composito, flore masculo in ramulo terminali.

B. cæspiticium, *Wils. l. c.* p. 332.

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* ! (No. 458).

Habitu staturaque *B. cæspiticii*, florescentia autem *B. pallescentis*.

32. B. EXSTANS (*Mitten*). Synoicum, caule breviusculo, foliis patentibus inferioribus ovalibus superioribus ellipticis lanceolatisve acuminatis nervo sub apice evanido vel excurrente margine apice vix dentato, cellulis laxis marginalibus duplici-seriatis angustis elongatis ætate infuscatis, perichætialibus longioribus, theca in pedunculo elongato inclinata horizontali pyriformi inæquali, ore amplo, peristomio normali.

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* ! (No. 456), et forma sterilis in reg. alp. (No. 419).

*B. pallenti* forma foliorum simile, quamvis folia e medio ad apicem formam magis acuminatam ostendunt. Planta fructifera thecis inclinatis horizontalibusve, primo visu *Funariæ Muhlenbergii* subsimilis.

33. B. cellulare, *Hook., Schw. Supp.* t. 214.

*Hab.* In Nepal, *Wallich* !

34. B. splachnoides (Brachymenium, *Harvey*.—Pohlia turbinata, *Schw.* t. 194 ?)

*Hab.* In Nepal, *Wallich* !

35. B. FLACCUM (*Wils. l. c.* p. 332). Dioicum ? caule innovationibus ramoso, foliis patentibus laxis flaccidis ellipticis piliformi-acuminatis nervo tenui ultra medium evanido margine integerrimo apiceve denticulo uno alterove instructis, cellulis laxis mollibus marginalibus paululum longioribus, perichætialibus angustioribus, theca in pedunculo flexuoso oblonga subelliptica inclinata horizontalive, operculo conico-acuminato, peristomio *Pohliæ* ciliis brevissimis rudimentariis, flore masculo in ramulo terminali foliis interioribus brevibus lanceolatis.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 487).

*Folia* flaccida. Formis flaccidioribus *B. pallentis* simile, sed theca

*B. acuminati.* Flores masculi in ramis gracilibus inter plantas fœmineas inveni, an et ex parte inferiore caulis fœminei egrediente determinare non possum.

36. B. Thomsoni (*Mitten*). Dioicum, cæspitosum, caule elongato ramoso, foliis erecto-patentibus elliptico-lanceolatis nervo excurrente cuspidatis margine apice parce denticulato subintegerrimo, cellulis teneris laxiusculis marginalibus angustis triplici serie dispositis, perichætialibus conformibus, theca in pedunculo gracili pyriformi cernua, operculo convexo conico, peristomio interno processibus perforatis ciliis brevibus rudimentariis in membrana altiuscule exserta, annulo composito.

B. cuspidatum, ex parte, *Wils. l. c.* p. 364.

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 401).

Primo visu *B. turbinato* var. *Schleicheri* simile, sed foliis angustis longe cuspidatis. *B. alpino* affinius, cellulis tamen latioribus longioribusque basi latioribus sed non ad nervum aggregatis.

37. B. pseudotriquetrum, *Hedw.* (Bryum *B. bimo* affine, *Wils. l. c.* p. 366.)

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 399, 408, 409, 409 *b*).

Specimina sterilia, formis tamen Europæis omnibus partibus conveni-entia.

38. B. turbinatum, *Hedw.* (B. cuspidatum ex parte, B. distans et B. appressum, *Wils. l. c.* pp. 364, 365.)

*Hab.* In Tibet. occid. reg. temp. et alp., *T. Thomson*! var. *a.* (No. 410, 410 *b*, 415, 416, 417); var. *Schleicheri* (No. 405, 414, 423); et *H. Strachey* (No. 403). In Kumaon, *Strachey et Winterbottom*; var. *latifolium*, *T. Thomson*! (No. 400, 412, 420).

39. B. Nepalense. (Brachymenium, *Hook.*—B. Hookeri, *Spreng.*—B. brevicaule, *Hampe*?—B. contortum, *Griff. Not.* p. 440; *Icon. Plant. Asiat.* ii. t. 100. f. 2.)

*Hab.* In Himalayæ tot. reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 506, 507, 508, 521, 526, 527, 528, 548, 551). Kumaon, *T. Thomson* (No. 505). In mont. Khasian. in arboribus in pinetis Moflong, *Griffith*! In Ceylon, *Thwaites*!

Species varians thecis erectis et interdum fere pendulis, sed structura foliorum et florescentia monoica constans.

40. B. clavariæformis, *C. Müller, Bot. Zeit.* 1853, p. 24.

*Hab.* In mont. Nilghiri, *Schmid.*

E descriptione a *B. Nepalensi*, florescentia dioica excepta, vix diversum videtur.

41. B. velutinum, *C. Müller, Bot. Zeit.* 1853, p. 33.

*Hab.* In mont. Nilghiri, *Schmid*! Ad Madras, *Wight*!

42. B. leptostomoides, *C. Müller, Synops.* i. p. 321.
*Hab.* In mont. Nilghiri, *Perrottet* ! *Foulkes* ! *et Schmid* ! Ad Madras, *Wight* !

43. B. torquescens, *B. & S.*
*Hab.* In Himalayæ occident. reg. temp., Kashmir, *T. Thomson* ! (No. 460).

44. B. apalodictyoides, *C. Müller, Bot. Zeit.* 1853, p. 21.
*Hab.* In mont. Nilghiri, *Schmid.*

45. B. paradoxum, *Schw.* t. 224.
*Hab.* In Nepal, *Wallich* !

46. B. Zollingeri, *Duby.*
*Hab.* In Nepal, *Wallich* ! In mont. Nilghiri, et in Ceylon, *Gardner* !

47. B. RECURVULUM (*Mitten*). Dioicum, cæspitosum, caule elongato, foliis erectis late ovalibus acuminatis apicibus patentibus nervo in mucronem excurrente margine anguste recurvis apice parce serrulato integerrimove, cellulis longiusculis marginalibus unica serie dispositis angustis vix conspicuis, perichætialibus interioribus ovatis, theca in pedunculo elongato pendula pyriformi, ore magno, operculo convexo-conico, peristomio normali, annulo lato composito.
*Hab.* In Nepal, *Wallick* !
*B. Billardieri* simile, sed foliis magis ovalibus vix serrulatis cellulis angustioribus. A *B. capillari* foliis margine vix distincto ubique recurvo satis distinctum.

48. B. WIGHTII (*Mitten*). Caule elongato subsimplici, foliis patentibus laxe imbricatis ovato-oblongis concavis apicibus patulis nervo in mucronem brevem excurrente margine fere ad apicem recurvo apice parce serrulato, cellulis basi angustis superne longitudine latitudinem triplo excedente utriculo primordiali repletis, marginalibus circiter sexseriatis angustis, perichætialibus ovato-lanceolatis, theca in pedunculo longissimo inclinata elongata clavata, peristomio normali.
B. strigosum, *Wils. l. c.* p. 366.
*Hab.* In India orient. *Wight* ! In mont. Nilghiri, *Gardner* ! *M'Ivor* ! In Ceylon, *Gardner* ! (No. 398).
*B. erythrocauli* et *B. densifolio* simile, foliis autem rigidioribus densioribus nitentibus siccitate tortis. A *B. ramoso* caulibus longioribus foliis æqualibus haud rosulatis siccitate minus contractis cellulis paululum minoribus et ambitu folii baseos magis ovato recedit. *Caulis* bi- triuncialis. *Folia* longitudine bilinearia, latitudine linearia.

49. B. MEDIANUM (*Mitten*). Dioicum, caule elongato-ramoso, foliis patentibus ellipticis nervo excurrente piliformi mucronatis marginibus inferne reflexis superne serratis, cellulis latis laxis utriculo primordiali dissoluto marginalibus triplici-seriatis, perichætialibus brevioribus

angustis, theca in pedunculo elongato pendula inæquali claviformi, operculo brevi conico, peristomio normali.

*Hab.* In mont. Nilghiri, *M'Ivor* ! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 369), specimina sterilia.

*B. ramoso* simillimum, foliis autem ambitu ovali-ellipticis non obovatis, longius acuminatis et cellulis duplo majoribus.

50. B. giganteum, *Hook.* (B. Sollyanum, *Griff. Not.* p. 446; *Icon. Plant. Asiat.* t. 91. f. 1.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich* ! Sikkim, *J. D. Hooker* ! (No. 392, 540). In sylvis Surureem et copiose in pinetis Moflong, *Griffith*; et in mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 371 *b*, 391). In Ceylon, *Gardner* (No. 597).

51. B. roseum, *Schreb.* (B. Commersonii, B. Commersonii aff., B. species, B. Zollingeri et B. Nilghiriensi aff., *Wils. l. c.* p. 367.)

*Hab.* In Kumaon et Tibet. occid. reg. temp., *T. Thomson* ! (No. 393, 395). In Nepal, *Wallich* !

Specimina quamvis sterilia a *B. Commersonii* longe diversa et a planta Europæa non recedentia.

52. B. ramosum. (Mnium *Hook. Icon. Plant. Rar.* t. 20. f. 2.—Bryum Auberti, *Mont.*; inde B. Nilgiriense, *ejusd.*—B. truncorum, *Wils. l. c.* p. 366.)

*Hab.* In Nepal, *Wallich* ! In mont. Nilghiri, *Perrottet* ! *Schmid* ! *G. Thomson* ! (No. 394).

In icone l. c. theca inclinata repræsentata est, sed in speciminibus, utplurimum, pendula videtur. A *B. truncorum* cellulis paululum minoribus et margine angustiore recedit.

## § X. Hypnaceæ.

Fabroniaceæ, Hookeriaceæ, Orthotheciaceæ ex parte, et Hypnaceæ ex parte, *Schimp. Coroll.*

Pleurocarpica. *Folia* cellulis elongatis prosenchymaticis alaribus heteromorphis plus minus distinctis. *Peristomium* Bryacearum.

### 1. Fabronia, *Raddi.*

1. F. secunda, *Mont.*

*Hab.* In mont. Nilghiri, *Perrottet* !

2. F. Goughii (*Mitten*). Dioica? cæspitosa, caule repente, foliis laxis patentibus compressis anguste ovatis longe subulato-piliformi-acuminatis margine arcte sed breviter serratis, nervo tenui infra medium evanido, cellulis basi subquadratis superioribus elongatis, perichætialibus latioribus acumine breviore serratis, theca in pedunculo brevi erecta ovali, peristomio *F. secundæ*.

*Hab.* In mont. Nilghiri, ad arborum truncos, *Gough* !

*F. secundæ* affinis, sed foliis duplo latioribus, cellulis partis folii superioris angustioribus dimidio brevioribus, margine arctius serrato. A *F. pusilla* var. *major*, foliis dimidio angustioribus, serraturis brevibus, cellulis paululum minoribus, et apiculo longiore diversa. Florem masculum frustra quæsivi. An vere dioica?

3. F. Schmidii, *C. Müller*, *Bot. Zeit.* 1854, p. 558.
*Hab.* In mont. Nilghiri, *Schmid.*

4. F. MINUTA (*Mitten*). Monoica, cæspitosa, exilis, caule repente, ramis brevibus curvatis, foliis densis patentibus late ovatis in apiculum filiformem patulum recurvumque acuminatis margine breviter arcte serratis, nervo medio evanido, cellulis basi quadratis superioribus longioribus oblongis tenuiter limitatis, perichætialibus late ovatis minute serratis brevi apiculatis, theca in pedunculo brevi *F. pusillæ*, flore masculo ad pedem fœminei.
*Hab.* Himalayæ occid. reg. temp., Kumaon, alt. 7000 ped. (in thallode *Parmeliæ Borreri* repens), *T. Thomson*!
*F. pusilla* fere minor, foliis patentioribus latioribus margine non lobato sed eodem modo ac in *F. octoblepharoide* serrato, cellulis superioribus longitudine latitudinem duplo excedentibus oblongis parietibus angustis. A *F. pusilla* et *F. octoblepharoide*, quarum cellulæ longitudine latitudinem triplo superant parietibusque crassioribus gaudent, foliis densioribus apiculo incano squarrosis, discrepat.

## 2. HYPNUM, *Dill.*, *Brid. et auct.* ex parte.

Leskea ex parte, *auct.*, Homalothecium, Isothecium ex parte, Brachythecium, Scleropodium, Eurynchium, Rynchostegium, Amblystegium, et Lescurea, *Schimp.*, Pterogonium ex parte, *auct.*
*Folia* uninervia.

### * *Lescurea.*

*Peristomium* internum imperfectum.

1. H. LÆVIUSCULUM (*Mitten*). Monoicum, caule repente pinnato, ramis erectis teretibus, foliis imbricatis ovatis brevi acuminatis semve lanceolatis concavis nervo medio evanido margine paululum recurvo superne serrulato, cellulis elongato-ovalibus alaribus pluribus parvis quadratis pellucidis, perichætialibus erectis latis convolutis apicibus serrulatis, theca in pedunculo breviusculo pallido cylindrica erecta, operculo conico-acuminato, peristomio interno rudimentario externo adhærente, annulo composito.
Pterogonium neckeroides, *Griff. Not.* p. 450; *Icon. Plant. Asiat.* ii. t. 98. f. 3.
*Hab.* In mont. Khasian., ad Mumbree, in arboribus, *Griffith*!
Gracilis. *Caulis* repens, ramis circiter trilinearibus colore stramineo-fuscis. Habitu *Stereodontis prorepentis*, sed longe gracilius, areo-

latione foliorum *Rhegmatodontibus* approximans. *Theca* in pedunculo semunciali.

2. H. pterogonioides. (Leskea, *Hook. Icon. Plant. Rar.* t. 24. f. 8.)
*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 739, 740, 741).

3. H. decorum. (Leskea longirostris, *Schw.* t. 290 *a*.)
*Hab.* In Nepal, *Wallich*!

4. H. fulvum. (Leskea fulva, *Harvey*; *Hook. Icon. Plant. Rar.* t. 23. f. 2.)
*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 758, 897).
*Theca* in pedunculo elongato erecta ovalis, operculo conico curvirostrato, peristomio interno processibus angustis dentium longitudine (eique adhærentibus ?) in membrana ad $\frac{1}{4}$ longitudinis exserta. *Color* pulchre fulvus nitidus, *Stereodonti russulo* similis.

5. H. ARGENTATUM (*Mitten*). Monoicum, dense cæspitosum, ramis erectis ramosis, foliis patentibus nitentibus ovatis sensim tenuiter acuminatis planiusculis nervo brevissimo margine remote serrulatis, cellulis elongatis teneris ad angulos laxioribus subquadratis concoloribus, perichætialibus erectis brevi-acuminatis serrulatis, theca in pedunculo rubro elongato magna ovata erecta siccitate sub ore contracta, operculo conico-acuminato, peristomio dentibus brevibus teneris, interno ?
*Hab.* In Himalaya occidentali, Kumaon, *Strachey et Winterbottom*!
Sericeo-argenteo-viridis, ramis erectis dense compacte cæspitosis semuncialibus inferne nudiusculis. *Pedunculus* subuncialis. Species primo visu *Brachymeniis* nonnullis (e. g. *B. velutino*) similis.

6. H. incompletum. (Leskea, *Griff. Not.* p. 478; *Icon. Plant. Asiat.* ii. t. 102. f. 3.)
*Hab.* In Assam, *Griffith*.

7. H. Bonplandii. (Leskea, *Hook.*—Hookeria Leskeoides, *ejusd. Musc. Exot.* t. 55.—Isothecium Nilgiriense, *Mont.*—Hypnum, *C. Müller*, *Synops.* ii. p. 462.—Pleuropus fenestratus, *Griff. Not.* p. 468; *Icon. Plant. Asiat.* ii. t. 90. f. 1; *Calcutta Journ. Nat. Hist.* iii. t. 18.)
*Hab.* In mont. Nilghiri, *Perrottet*! *Gough*! *Foulkes*! *Schmid*! In Assam, *Griffith*! In Ceylon, *Gardner*!
Inter specimina Indica et Americana necnon alia e Promontorio Bonæ Spei allata discrimen nullum inveni. Habitus *Hypni sericei*.

** *Brachythecium*.

*Peristomium* normale.

8. H. LONGICUSPIDATUM. Dioicum ? caule procumbente pinnato, foliis imbricatis late ovatis concavis plicatis in apiculum elongatum angustum denticulatum subito attenuatis nervo ad medium evanido

**margine parce serrulatis, ramis valde excavatis tenuissime plicatis, cellulis elongatis angustis alaribus paucis parvis oblongis, perichætialibus erectis lanceolatis tenuiter acuminatis, theca in pedunculo elongato ovali-cylindrica inclinata, operculo conico acuminato, peristomio normali.**

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*.

*H. cirrhoso* valde simile, sed foliis in dimidio inferiore latioribus tenuioribus parcius plicatis diversum. Modus crescendi *H. salebrosi*.

9. H. CUSPIDIFERUM (*Mitten*). Dioicum? caule procumbente piunnato, foliis patentibus, caulinis latissime cochleariformibus subito in acumen tenue longum denticulatum attenuatis, nervo tenui medio evanido, ramis hastato-ovatis lanceolatis subintegerrimis, cellulis angustis circiter latitudine $\frac{1}{3000}$ longitudine $\frac{1}{500}$ unciæ metientibus alaribus pluribus parvis pallidis, perichætialibus e basi ovata enervi longe subulato-attenuatis, theca in pedunculo rubro lævi oblonga inclinata, operculo conico, peristomio dentibus flavidis processibus angustis æquilongis ciliis binis interpositis in membrana ad dentium tertiam partem exserta.

H. Buchanani, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 996).

Primo adspectu *H. Buchanani* simile, sed foliis caulinis profunde cochleariformibus subito in acumen angustum æquilongum attenuatis distinctissimum.

10. H. Buchanani, *Hook.*

*Hab.* In Himalayæ reg. temp., Nepal, *Buchanan*! *Wallich*! Sikkim, *J. D. Hooker* (No. 998). Kumaon, *Strachey et Winterbottom.* In mont. Nilghiri, *Schmid*! In Assam, *Griffith*!

Cellulæ latitudine circiter $\frac{1}{2000}$, longitudine $\frac{1}{400}$ unciæ metientes.

11. H. CAMERATUM (*Mitten*). Dioicum? caule procumbente, ramis curvatis laxe pinnatis, foliis patentibus rameis latissime ovatis subhastatis concavis subabrupte apiculatis apice serrulatis, nervo tenui medio evanido, ramulinis ovalibus acuminatis concavis angustis serrulatis, perichætialibus e basi elongata latiuscula subulatis integerrimis reflexis, theca in pedunculo rubro scabro oblongo-cylindrica suberecta inclinatave, operculo conico longirostrato, peristomio dentibus aurantiacis processibus æquilongis ciliis binis coadunatis brevioribus interpositis in membrana ad tertiam dentium partem exserta.

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 1076). Kumaon, *Strachey et Winterbottom*!

*H. Buchanani* robustius, foliis brevioribus latioribus et pedunculo scabro diversum.

12. H. DECURVANS (*Mitten*). Caule iterum iterumque prolifero inferne nudo superne curvato ramis sensim apicem versus longitudine decrescentibus pinnato, foliis (caulinis) patentibus late ovatis obtusis in

acumen angustum breve lanceolato-productis nervo viridi citra medium evanido margine ubique minute dense serrulato, cellulis parvis angustis chlorophyllo obscuris basin versus latioribus alaribus nullis conspicuis, foliis ramulinis ovatis acuminatis acumine sæpe flexo, perichætialibus e basi ovata subulatis patulis, theca in pedunculo scabro.

*Hab.* In Himalaya boreali-occident., *Royle*! In vallibus Sutleji flum. alt. 8000 ped., *T. Thomson* (No. 1011).

*Rami* bi- triunciales. *Folia* obscuriuscula. *H. camerato* statura simile, sed foliis caulinis superne latioribus eplicatis habituque rigidiore.

13. H. PROCUMBENS. Dioicum, caule procumbente pinnato ramis curvatis, foliis patentibus late ovatis sensim subulato-acuminatis margine basi planiusculo integerrimis in ramulinis serrulatis, nervo ad $\frac{3}{4}$ evanido, cellulis elongatis latitudine $\frac{1}{4000}$, longitudine $\frac{1}{350}$ unciæ metientibus, perichætialibus parvis lanceolato-subulatis tenuissime acuminatis, theca in pedunculo elongato rubro lævi cylindrica suberecta curvula, operculo brevi conico obtuso, peristomio dentibus flavidis processibus æquilongis luteis ciliis brevioribus in membrana ad tertiam dentium longitudinis exserta.

H. glareosum, *Wils. in Sched.*

*Hab.* In Nepal, *Wallich*! In mont. Nilghiri, *G. Thomson*! (No. 1141), *Schmid*! *et Foulkes*!

*H. Buchanani* robustius, foliis cellulis angustioribus sericeis nitidis.

14. H. rutabulum, *Linn.* (H. rutabulum, H. albicans, et H. rivulare, *Wils. in Sched.*)

*Hab.* In Himalaya boreali-occident., *Royle*! Kashmir reg. temp., *T. Thomson*; et Tibet. occ., *T. Thomson*! (No. 1019, 1045 *b*, 1061 *b*, 1096, 1156).

15. H. campestre, *B. & S.* (H. salebrosum? *Wils. in Sched.*)

*Hab.* In Kashmir reg. temp., *T. Thomson*! (No. 1078).

16. H. Kamounense, *Harvey*.

*Hab.* In Nepal, *Wallich*!

17. H. salebrosum, *Hoffm.*

*Hab.* In Himalayæ boreali-occident. reg. temp., *T. Thomson*! (No. 995, 1003, 1046); et in Tibet. occid., *T. T.* (No. 1043).

18. H. plumosum, *Swartz.* (H. secundum, *Mont.*—H. œdistegum, *C. Müller, Synops.* ii. p. 350.)

*Hab.* In Himalayæ reg. temp., Sikkim, *J. D. Hooker* (No. 999, 1129, 1177). Nepal orient., *J. D. Hooker* (No. 997, 1001). In Kumaon, *Strachey et Winterbottom*! Simla, *T. Thomson*! (No. 1157). In mont. Khasian., *Griffith*! *J. D. Hooker et T. Thomson* (No. 1022). In mont. Nilghiri, *Perrottet*! *et Gardner*! In Ceylon, *Gardner*! (No. 1020, 1021).

19. H. glaciale. (Brachythecium, *Bryol. Europ.*)

*Hab.* In Tibet. occid. reg. alp. et temp., montibus prov. Ladak, alt. 12,000–18,000 ped., *T. Thomson*!

*** *Eurynchium.*

*Pedunculus* asper.

20. H. hians, *Hedw.* (H. cordatum, *Harvey, Icon. Plant. Rar.* t. 24. f. 9.—H. Swartzii, *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Simla et Tibet. occid. *T. Thomson*! (No. 1055, 1170). In mont. Khasian. reg. temp., *J. D. Hooker*! *et T. Thomson*! (No. 1028). Etiam per Europam et Americam borealem temperatam.

Species in Europa vel prætervisa vel cum *H. Swartzii* Turn. et *H. prælongo* Dill., cujus *H. Stokesii* Turn. synonymon est, ab auctoribus commutata. Ab *H. Smartzii* foliis nitentibus latioribus et cellulis longe majoribus certe diversa. Ab *H. prælongo* forma foliorum longe aliena.

21. H. DUMOSUM (*Mitten*). Dioicum, caule repente ramis erectis dendroideis bipinnatis, ramulis inordinatis, foliis patentibus rameis hastatis ramulinis ovato-lanceolatis nervo ad $\frac{3}{4}$ evanido marginibus tenuiter serrulatis, cellulis elongatis alaribus pluribus oblongis pallidis pellucidis ventricosis, perichætialibus ovatis subulato-attenuatis integerrimis, nervo brevi, theca in pedunculo elongato fusculo scabro ovali inæquali inclinata, operculo conico breviter curvirostrato, peristomio dentibus fusco-rubris processibus perforatis æquilongis ciliis singulis binisve dimidio brevioribus.

H. Sullivantii, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1041).

Habitu *H. myosuroidi* subsimile. *Folia* a basi ad apicem sensim angustata, haud acuminata, planiuscula. Ab *H. Sullivantii* satis diversum et ad alienam sectionem pertinens.

22. H. HUMILLIMUM (*Mitten*). Monoicum, pusillum, habitu staturaque *H. tenelli*, foliis ellipticis acuminatis serrulatis, nervo medio evanido, cellulis elongatis alaribus paucis oblongis pallidis, perichætialibus erecto-patentibus ovato-lanceolatis serrulatis, pedunculo aspero.

*Hab.* In mont. Nilghiri, ad Ootacamund inter muscos arboricolas, *Foulkes*!

Pallide luteo-viride inter muscos vagans. Species pusilla asperitate pedunculi et foliorum forma, ut videtur, distincta.

23. H. scabrisetum, *Schw., Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 1037).

*Pedunculus* lævis.

24. H. rusciforme, *Wies.*

*Hab.* In Himalayæ reg. temp. et alp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 1158). Kumaon, *Strachey et Winterbottom*! Simla, &c., *T. Thomson*! (No. 965, 1150, 1155); Tibet. occid. reg. temp., *T. Thomson*! (No. 966, 1047, 1153).

A forma Europæa vulgari foliis minus acuminatis paululum recedit. Specimina fere omnia sterilia.

25. H. vagans, *Harvey, Hook. Icon. Plant. Rar.* t. 24. f. 2. (H. Megapolitanum, *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 1084, 1161). Dioicum, *H. hianti* simile, sed pedunculo lævi.

26. H. SEMITORTUM (*Mitten*). Dioicum? caule procumbente ramoso, foliis patenti-divergentibus compressis sparsis, caulinis ovalibus ovatisve subulato-acuminatis semitortis nervo ad $\frac{3}{4}$ evanido marginibus minute serrulatis, rameis subbifariis ovatis asymmetricis acutis argutius serrulatis, cellulis elongatis longitudine $\frac{1}{400}$ latitudine $\frac{1}{250}$ unciæ metientibus alaribus nullis, perichætialibus lanceolatis integerrimis e basi erecta squarroso-reflexis, theca in pedunculo lævi gracili oblonga inæquali horizontali, operculo conico rostrato peristomio interno processibus pertusis ciliis binis appendiculatis interpositis in membrana ad dentium tertiam longitudinis partem exserta.

H. Megapolitanum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 968).

*H. Swartzii* statura habituque subsimile, sed foliis magis ovalibus, nervo uno lateri propinquiore, et pedunculo lævi.

27. H. PLANIUSCULUM (*Mitten*). Monoicum, caule procumbenti, foliis patentibus ovatis paululum asymmetricis planiusculis nervo ad $\frac{3}{4}$ evanido marginibus serrulatis, cellulis elongatis angustis longitudine $\frac{1}{800}$ latitudine $\frac{1}{350}$ unciæ metientibus ad basin majoribus alaribus vix ullis distinctis, perichætialibus e basi ovata subulatis patentibus enerviis serrulatis, theca in pedunculo lævi rubro gracili oblonga indurata, operculo conico rostrato, peristomio normali.

H. Megapolitanum, *Wils. in Sched.*

In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 969).

*H. conferto* subsimile, foliis tamen planioribus et apicem versus angustioribus.

28. H. HERBACEUM (*Mitten*). Monoicum, caule procumbente, ramis vage ramosis ramulis elongatis subsimplicibus, foliis subcompressis patentibus ovatis acuminatis planiusculis nervo ad $\frac{3}{4}$ evanido marginibus serrulatis, cellulis elongatis longitudine $\frac{1}{2000}$ latitudine $\frac{1}{500}$ unciæ metientibus alaribus nullis, perichætialibus lanceolatis attenuatis

patulis, theca in pedunculo elongato oblongo-cylindrica horizontali, operculo conico rostrato, peristomio normali.

H. Megapolitanum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 1162). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1099).

Formis majoribus *H. Megapolitani* simile, sed foliis basi angustioribus.

29. H. SPARSILE (*Mitten*). Monoicum, pusillum, prostratum, caule vage ramoso, foliis remotis distichaceis patentibus lanceolatis planis a medio ad apicem subserrulatis integerrimisve nervo ad medium evanido, cellulis valde elongatis laxiusculis, perichætialibus lanceolatis patentibus, theca in pedunculo elongato cylindrica collo sensim attenuato inclinata suberectave.

*Hab.* In Assam superiore, *Griffith*!

Parvulum, habitu adspectuque formarum minorum graciliorum *H. riparii*. *Folia* haud acuminata, sed a medio ad apicem sensim angustata directione statu sicco haud mutata. *Theca* æqualis. *Pĕristomium* (fide Griffithii) *Leskeæ*.

30. H. Tavoyense, *Hook.* (Hookeria prostrata, *Harvey, Hook. Icon. Plant. Rar.* t. 20. f. 5.)

*Hab.* Ad Tavoy, *Wallich*! In planitie Indiæ tropicæ, Behar, *J. D. Hooker*! (No. 1073).

31. H. WIGHTII (*Mitten*). Monoicum, prostratum, subpinnatum, ramis vagis elongatis deplanatis, foliis patenti-divergentibus elliptico-lanceolatis obtusis sublingulatis apice apiculo parvo, nervo paulo ultra medium evanido, margine apice serrulato, cellulis elongatis angustis, perichætialibus patulis ovatis acumine lanceolato superne serrulato, theca in pedunculo gracili elongato erecta inclinata horizontalique, operculo conico acuminato, peristomio interno processibus dentibus æquilongis ciliis brevissimis interpositis in membrana ad tertiam partem dentium longitudinis exserta.

*Hab.* Ad Madras, *Wight*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! Ad Moulmein, *Parish*!

H. *Tavoyensi* simile, speciosius tamen, foliis non a medio ad apicem acuminatis sed sublingulatis cellulis dimidio angustioribus.

32. H. ligulatum, *C. Müller, Bot. Zeit.* 1856, p. 438.

*Hab.* In India orient. *Elphinston.*

**** *Amblystegium.*

33. H. serpens, *Linn.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 1077).

34. H. OBTUSULUM (*Mitten*). Dioicum? habitu *H. serpentis*, foliis patentibus laxis ovatis sensim angustatis, nervo crasso sub apice sub-

obtuso evanido, marginibus superne minute serrulatis, cellulis minutis brevibus oblongis obscuriusculis, perichætialibus ovato-lanceolatis acutis apice serrulatis, theca in pedunculo elongato ovali cylindrica inclinata, peristomio processibus solidis dentium longitudine ciliis singulis interpositis in membrana ad tertiam dentium partem exserta.

*Hab.* In Himalayæ occidentalis regione temperata, Kumaon, ad Saba, alt. 9000 ped., *Strachey et Winterbottom* !

*H. fluviatili H. irriguoque* affine, sed minus, foliis non acuminatis apice latiusculo subobtuso et cellulis longe minoribus.

35. H. tenuissimum. (Amblystegium, *Bryol. Europ.*)

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* (No. 1036).

36. H. RIVICOLA (*Mitten*). Monoicum, *H. radicali* simillimum, foliis ovato-lanceolatis haud acuminatis, cellulis distinctis iis *H. radicalis* paululum longioribus, perichætialibus apice brevi-acuminatis serrulatis.

*Hab.* In Tibet. occid. reg. temp., vallibus fluvii Indi, *T. Thomson* (No. 991, ex parte, *H. campestri* consociatum).

*H. radicali* vero, non Bryologiæ Europææ (ubi species sub hoc nomine bene illustrata ad *H. varium* certe pertinet), valde affine, sed e speciminibus imperfectis forma foliorum magis ovata non sensim acuminata et statura majore spicarum diversum videtur.

37. H. riparium, *Linn.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* ! (No. 1083 *b*).

38. H. TIBETANUM (*Mitten*). Caule pinnato subsimplicive, foliis laxis patentibus ovato-lanceolatis planiusculis integerrimis nervis binis sub medio evanidis, cellulis elongatis alaribus ad angulos tantum obviis pallidis chlorophyllosis.

*Hab.* In Tibet. occid. reg. alp., *H. Strachey* ! (No. 1052).

Ab *H. ripario*, quocum facie, forma, cellularumque structura convenit, cellulis alaribus ad angulos aggregatis nervis binis tenuibus et habitu paululum strictiore differt.

39. H. uncinatum, *Hedw.*

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker* (No. 980, 988, 1108).

40. H. commutatum, *Hedw.*

*Hab.* In Himalayæ occident., Tibet. occid. reg. temp. et alp., *T. Thomson* ! (No. 982, 983, 1138, 1159). Kashmir, *T. Thomson* (No. 990). In Kumaon, *Strachey et Winterbottom* !

41. H. filicinum, *Linn.*

*Hab.* Forma vulgaris in Tibet. occid. reg. temp. et alp., *T. Thomson* (No. 994, 1067, 1082, 1136, 1143, 1145, 1147, 1153, 1154). Himalayæ occident. reg. temp., Jamu, *T. Thomson* ! (No. 1098, 1175). Kumaon, *T. Thomson* (No. 1142).

Forma major in Tibet. occid. reg. alp., *T. Thomson* (No. 992, 1080). Jamu, temp. (No. 998), forma foliis strictis.

Forma "vallis-clausæ" in Tibet. occid. reg. temp., *T. Thomson* (No. 985, 986, 1079). In Himalaya boreali-occident., *Royle*!

42. H. ORBICULATUM (*Mitten*). Monoicum, *H. Zippellii* simillimum, foliis patentibus subsecundis e basi orbiculari acuminatis, nervo crasso percurrente, marginibus integerrimis, cellulis parvis oblongis obscuris alaribus inconspicuis, perichætialibus erectis lanceolatis plicatis, theca in pedunculo elongato flexuoso ovali-cylindrica inæquali inclinata, peristomio interno processibus dentium longitudinis ciliis binis brevioribus interpositis in membrana fere ad dentium dimidium exserta.

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1122).

Habitu, colore et statura *H. Zippellii*, Dozy et Molk., foliis tamen non cordato-ovatis sed orbiculari-acuminatis.

43. H. SAXETORUM (*Mitten*). Monoicum, caule repente, ramis fasciculatis, foliis patentibus ellipticis concavis convolutis integerrimis apice obtusiusculis subcucullatis, nervo tenui percurrente, cellulis elongatis angustis alaribus distinctis paululum ventricosis fuscis, perichætialibus lanceolatis apice latiusculis breviter apiculatis ut plurimum in lacinias 2–3 fissis, theca in pedunculo pallide fusco oblonga inclinata, operculo conico.

*Hab.* ——?

*Color* in apicibus caulium flavo-rufescens, mox fuscescens, subniger. Statura *H. conferti*.

## 3. METEORIUM, *Brid. emend.*

Pilotrichum ex parte (*C. Müller, Synops.* ii. p. 152), Esenbeckia (*Brid.* ii. p. 753), Cryptotheca (*Hornschuch, in Muscis Mexicanis a Deppe et Schiede lectis*), Acrobryum (*Dozy et Molk. in Kruidk. Arch.*).

*Folia* uninervia, cellulis elongatis. *Calyptra* mitriformis.

Genus a *Pilotrichis* veris foliis binervatis cellulisque rotundatis satis alienum. A *Trachypode*, quocum similitudinem magnam in speciebus nonnullis habet, cellulis angustis et calyptræ forma recedit.

### * *Esenbeckia.*

*Rami* procumbentes erective.

1. M. plicatum. (Esenbeckia, *Nees.*)

*Hab.* In Himalayæ orient. reg. temp., in montibus Yalloong, alt. 10,000 ped., fragmentum, *J. D. Hooker*.

2. M. crassicaule. (Neckera, *C. Müller, Synops.* ii. p. 132.)

*Hab.* In Ceylon, *Gardner* (No. 798).

*Caulis* elongatus, semipedalis, procumbens? dependensve? simplex vel

interdum ramulis pluribus diversæ crassitudinis ramosus. *Folia* perichætialia elongata. *Theca* immersa, ovali-cylindrica. *Peristomium* parvum.

3. M. FLEXIPES (*Mitten*). *M. crassicauli* simillimum, ramis non flagelliferis parce ramosis ut plurimum simplicibus, foliis patulis turgide concavis late ovatis obtusis apiculo brevi-subulato marginibus subintegerrimis vix distincte serrulatis nervo brevi tenui infra medium evanido, cellulis angustis elongatis alaribus pluribus parvis quadratis fuscis, perichætialibus elongatis in cylindrum convolutis, theca in pedunculo perichætii longitudine interdum paululum longiore flexo ovali-cylindrica.

*Hab.* In mont. Nilgiri, *Gough*! *Gardner*! In Ceylon, *Thwaites*! *et Walker*!

*M. crassicauli* valde simile, sed paululum gracilius, foliis acumine breviore et theca e perichætio anguste convoluto exserta.

4. M. WIGHTII (*Mitten*). Caule repente, ramis simplicibus parce ramosisve, foliis divergentibus latissime ovatis concavis acutis basi cordatis alis parvis undulatis circinatis nervo ad $\frac{3}{4}$ evanido margine superne serrulatis, cellulis angustis alaribus nullis distinctis basi infima paucis parum latioribus fuscis, perichætialibus e basi lata amplexante subito attenuatis serrulatis, theca immersa in pedunculo brevissimo ovali, operculo conico acuminato, peristomio dentibus pallidis processibus sessilibus æquilongis, calyptra parva mitriformi pilosa.

*Hab.* In Nepal, *Wallich*! In Rangoon, *Herb. Wight*!

*M. Brasiliensi* (*Antitrichia*, Hornsch.) statura simile, sed foliis basi auriculis circinatis; *M. pingui* affinius. Ab affinibus foliis densis divergentibus et theca immersa refugit.

5. M. FOULKESIANUM (*Mitten*). (*M. acuminato* simillimum.) Foliis late ovalibus concavis acutis vix acuminatis nervo ad $\frac{3}{4}$ evanido margine integerrimo, cellulis angustis alaribus a margine remotiusculis fuscis subquadratis subobscuris inter eas et marginem parvis quadratis obscuriusculis.

*Hab.* In mont. Nilghiri, *Foulkes*!

*Rami* bi- triunciales, rarius inordinate parce ramulosi, subfasciculati, curvati, habitu *Leucodonti secundo* similes. *Folia* imbricata, nitida, concava, apicem versus non excavata, basi rotundata. Structura descripta ab affinibus dignoscitur.

6. M. orientale. (Neckera, *C. Müller, Bot. Zeit.* 1856, p. 437.)

*Hab.* In India orientali, *Herb. Sendtner.*

7. M. SCABRIUSCULUM (*Mitten*). Dioicum, caule repente, ramis subpinnatis simplicibusve, foliis julaceo-imbricatis patentibus oblongis cymbiformibus apiculo brevi latiusculo marginibus integerrimis nervo ad medium evanido, cellulis angustis alaribus pallide fuscis pellucidis,

perichætialibus vaginantibus, theca in pedunculo semunciali gracili scabriusculo ovali.

*Hab.* In montibus Concan, *Law* !

Facie *M. acuminati*, foliorum forma autem *M. frondoso* affine; theca longius exserta in pedunculo scabriusculo diversum.

8. M. FRONDOSUM (*Mitten*). Dioicum, caule repente, ramis elongatis subdendroideis pinnatis, ramulis patentibus, foliis julaceo imbricatis oblongis cymbiformibus apiculo brevi latiusculo basi rotundatis marginibus integerrimis, nervo ad medium evanido, cellulis angustis lævibus alaribus fuscis incrassatis obscuris, perichætialibus elongatis vaginantibus, theca in pedunculo subsemunciali (cujus dimidium e perichætio exsertum) ovata subinæquali.

Neckera acuminata, *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner* (No. 826, 827) *et Walker.*

*M. acuminato* habitu facieque simile, sed paululum robustius, foliis longioribus, apiculo latiore, et basin versus non dilatatis.

9. M. acuminatum. (Neckera, *Hook. Musc. Exot.* t. 151.)

*Hab.* In Himalaya centrali et orientali, Nepal et Sikkim, *Gardner* ! *J. D. Hooker* ! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 828).

In icone Hookeriana folia basin versus non satis ampliata depicta sunt.

*Rami* erecti, inferne nudi, superne ramulis decrescentibus frondiformi-pinnati. *Folia* straminea nitentia, e basi subcordata latissime ovata, cymbiformi-concava, medio tenus nervata, apiculo plano, margine serrulato, cellulis angustis distinctis alaribus numerosis latioribus quadratis oblongisque subobscuris fuscis.

*Rami* elongati penduli.

10. M. HOOKERI (*Mitten*). Caule primario repente, ramis erectis frondiformi- regulariter pinnatis pendulisve longissimis parce divisis, ramulis brevibus pinnatis, foliis patulis divergentibusque late ovatis acuminatis planiusculis basi cordatis, alis parvis circinatis, nervo brevi furcato, marginibus serrulatis, cellulis elongatis distinctis lævibus, perichætialibus basi latis elongatis convolutis longe subulatis, theca in pedunculo brevissimo immersa globoso-ovali.

Pilotrichum crassum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 809, 810, 811). In mont. Khasian. teg. temp., *J. D. Hooker et T. Thomson* (No. 797).

*Caulis* pendulus, pedalis vel sesquipedalis. *Folia* straminea viridiave. *M. specioso* subsimile, sed foliis magis divaricatis; a *M. tumido* foliorum forma superne latioribus apice acutis, cellulis ubique angustis differt.

11. M. tumidum. (Neckera, *Dicks.*)

*Hab.* Ad Madras, *G. Thomson* ! In Ceylon, *Gardner* ! (No. 940).

*Folia* patula, cordato-ovata, acuminata, apice acuta obtusiusculave, nervo variabili sub apice evanido, margine superne minute eroso, cellulis

superne ovoideis inter se subremotis inferioribus elongatis angustis alaribus nullis, perichætialibus patentibus lanceolatis. *Theca* immersa ovalis, operculo conico rostrato. *Calyptra* parva, operculo brevior.

12. M. NITIDUM (*Mitten*). Caule repente, ramis frondiformibus regulariter pinnatis pendulisve elongatis flexuosis inordinate laxe pinnatis, foliis patentibus laxe imbricatis oblongo-ovalibus breviter apiculatis tri- quadri- profunde plicatis basi cordatis, alis rotundatis crenatis undulatis margine serrulatis, nervo brevissimo vix distincto, cellulis elongatis angustis distinctis lævibus, perichætialibus elongatis ellipticis longe acuminatis convolutis erectis subintegerrimis, theca in pedunculo brevissimo immersa globoso-ovali.

Pilotrichum nitidum, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 800, 915). In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 865 *b*).

*Rami* erecti, biunciales, penduli, pedales; ramuli cum foliis latitudine circiter lineares. *Folia* pallide viridia subnitida.

13. M. speciosum. (Acrobryum speciosum, *Dozy et Molk.* cum icone in *Kruidk. Arch.*)

*Hab.* In mont. Khasian. reg. temp., ad Maamloo, *Griffith*! Nunklow, *J. D. Hooker et T. Thomson*! (No. 799) (etiam in Java).

14. M. DIVERGENS (*Mitten*). Ramis strictis, foliis divergentibus late ovatis subcordatis in acumen tortum attenuatis marginibus serrulatis nervo brevi simplici furcatove, cellulis elongatis angustis lævibus basi paucis rubris.

Pilotrichum squarrosum, *Wils. in Sched.*

*Hab.* In collibus Jyntea (prope Silhet), reg. subtrop., *J. D. Hooker et T. Thomson* (No. 803).

A *M. squarroso* foliis divergentibus haud squarroso-reflexis et ramis strictis differt. A *M. specioso* foliis magis congestis strictius divergentibus et structura certe recedit.

15. M. squarrosum. (Neckera, *Hook. Icon. Plant. Rar.* t. 22.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 805, 913, 923). Kumaon, *Strachey et Winterbottom*! In Behar, monte Paras Nath, *J. D. Hooker*! (No. 816). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 801, 914, 916, 921, 922, 931, 934). In mont. Nilghiri, *M'Ivor*! Ad Madras, *Wight*! In Ceylon, *Gardner*! (No. 814, 929). In Moulmein, *Parish*! Ad Rangoon, *M'Clelland*!

16. M. reclinatum. (Pilotrichum reclinatum, *C. Müller, Bot. Zeit.* 1854, p. 572.)

*Hab.* In mont. Nilghiri, *Schmid.*

17. M. PHÆUM (*Mitten*). Dioicum? caule repente, ramis longissimis pendulis inordinate pinnatis, foliis laxe patulis basi subcordatis ovatis

tenuiter acuminatis nervo medio tenui marginibus minute serrulatis, cellulis elongatis longitudine $\frac{1}{800}$ latitudine $\frac{1}{4000}$ unciæ metientibus circiter tripapillosis obscuris, perichætialibus ovato-lanceolatis longioribus tenuioribus, theca in pedunculo brevissimo ovali immersa, peristomio dentibus elongatis interno processibus longioribus sessilibus.

Pilotrichum phæum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 837, 841, 852, 878).

*Rami* spithamei, flexuosi, foliis pulchre flavidis subrubentibus, vetustioribus fusco-nigricantibus.

18. M. FLAMMEUM (*Mitten*). Dioicum? caule repente, ramis longis laxe pinnatim ramosis flexuosis pendulis, foliis squarrosis late ovatis subcordatis subulato-acuminatis, rameis ovatis longe subulato-attenuatis, nervo sub acumine evanido, marginibus minute serrulatis undulatis, cellulis elongatis punctulatis basin versus pellucidioribus lævibus alaribus nullis, perichætialibus lanceolatis erectis, theca in pedunculo æquilongo e perichætio exserta ovali, operculo subulate conico-rostrato.

Pilotrichum phæum, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 804).

*M. phæo* perquam simillimum, foliis autem caulinis latioribus nitidioribus, cellulis latioribus; *perichætium* parvum, foliis angustis et theca exserta diversum.

19. M. SOLUTUM (*Mitten*). Ramis pinnatim ramosis, foliis e basi cordata erecta auriculis parvis circinatis caulem amplectente ovatis recurvo-squarrosis subulato-attenuatis concavis margine ubique minutissime serrulatis, nervis binis inæqualibus brevissimis indistinctisve, cellulis angustis elongatis lævibus alaribus nullis.

Hypnum stellatum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 970).

Habitu facieque speciminum paucorum *Hypno stellato* subsimile, foliis autem magis squarrosis; a reliquis *Meteoriis* Indicis nervis binis brevibus recedit.

20. M. cordatum. (Hypnum, *Harvey, Hook. Icon. Plant. Rar.* t. 24. f. 9.)

*Hab.* In Nepal, *Wallich* ! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* ! (No. 724).

Habitu rigidiore a *M. patulo* et affinibus paululum recedit. Calyptram non vidi.

21. M. MEMBRANACEUM (*Mitten*). Ramis elongatis pendulis flexuosis pinnatim ramosis, foliis imbricatis pallidis basi cordatis alis parum undulatis ovatis sensim lanceolato-acuminatis undulatis concavis nervo sub apice evanido margine serrulatis, cellulis parvis angustis indistinctis papillosis basi conformibus.

*Hab.* "In montibus Negrogam versus regionis Assamicæ altæ," *Griffith* !

*Caulis* pedalis, habitu, mollitie, statura coloreque *Neckeræ molli* simile,

foliis tamen tenui-membranaceis valde papillosis. E substantia quamvis nullibi obscura opacave cellulas observare non facile est.

22. M. Wallichii. (Neckera, *Decand.*)

*Hab.* In Nepal, *Wallich.* Per Indiam temperatam et calidiorem, inter muscos vulgare; in Ceylon, *Gardner.*

23. M. Hookeri (*Mitten*). Dioicum, caule repente, ramis elongatis pendulis flexuosis inordinate pinnatim ramosis, foliis patentibus e basi cordatis alis undulatis amplectentibus sensim angustatis apice lanceolato-piliformi-attenuatis semitortis, nervo medio evanido, margine ubique serrulato undulato, cellulis basi in folii medio majoribus pellucidioribus quasi a basi nervi radiatim dispositis superioribus elongatis papillòsis subobscuris, perichætialibus patentibus ovato-lanceolatis undulatis, theca in pedunculo æquilongo exserta inclinata ovali, operculo conico brevirostrato, peristomio dentibus angustis processibus æquilongis in membrana ad dentium $\frac{1}{4}$ longitudinis exserta.

Pilotrichum canescens ex parte, et P. fuscescens ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., *J. D. Hooker* (No. 839). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 888).

*M. aureo* simile habitu coloreque, sed foliis brevioribus piliformi-attenuatis acumine flavo nunquam canescente et cellulis quasi a basi ad medium radiatis.

24. M. commutatum (*Mitten*). Caule repente, ramis elongatis flexuosis pinnatis pendulis, foliis erecto-patentibus e basi cordata sensim late lanceolato-attenuatis marginibus dense minute serrulatis nervo medio evanido, cellulis angustis dense minute papillosis obscuris basi pallidioribus alaribus paucis vix conspicuis.

Pilotrichum canescens, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 876, 851, ex parte).

*M. canescenti* persimile, foliis autem magis attenuatis, cellulis angustioribus obscurioribus et ad folii basin aliter dispositis.

25. M. hispidum. (Neckera hispida, *C. Müller, Bot. Zeit.* 1854, p. 570.)

*Hab.* In mont. Nilghiri, *Schmid.*

26. M. aureum (*Mitten*). Caule repente ramis longissimis pendulis flexuosis inordinate pinnatim ramoso, foliis patentibus basi subcordatis sensim angustatis hastato-lanceolatis margine sæpe subpellucido serrulatis nervo medio evanido, cellulis basi ad nervum pellucidioribus in formam semiorbicularem dispositis superioribus obscuris, perichætialibus patentibus ovato-lanceolatis tenuiter acuminatis, theca (ex icone Griffithii) emergente ovali, operculo conico subulato, calyptra mitriformi glabra.

Neckera aurea, *Griff. Not.* p. 459; *Icon. Plant. Asiat.* ii. t. 87. f. 11.—Pilotrichum canescens, ex parte, et P. aurantiacum, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., ad Maamloo, *Griffith! J. D. Hooker*

*et T. Thomson* (No. 868, 892, 894, 927). In collibus Jyntea, *J. D. Hooker et T. Thomson* (No. 880). In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 841 *b*, 851).

*Caulis* gracilis, longissimus, sæpe pedalis, ramis varie flexis subuncialibus. *Color* in partibus junioribus flavus, ætate sensim fuscescens, nitoris destitutus. *M. floribundo* affine, sed robustius.

27. M. RETRORSUM. Ramis elongatis pendulis flexuosis vage subpinnatis, foliis patenti-appressis e basi subcordata vix undulata ovato-lanceolatis attenuatis margine serratis serraturis sæpe retroflexis superne paululum undulatis nervo ad medium evanido, cellulis omnibus conformibus papillosis subobscuris.

*Hab.* In Ceylon insula, *Gardner* !

*M. aureo* simile, paululum crassius, foliis appressioribus, cellulis majoribus subdistinctis basi non mutatis.

28. M. CONVOLVENS (*Mitten*). Caule repente, ramis longis flexuosis pendulis inordinate pinnatis, foliis rameis appressis ramulinis patentibus laxis ovato-lanceolatis tenuiter acuminatis marginibus minute remotiuscule serrulatis, nervo medio evanido, cellulis elongatis lævibus conformibus, perichætialibus ovato-lanceolatis parvis vagina vix duplo longioribus, theca in pedunculo curvato scabro æquilongo ovali scabra, operculo conico rostrato, peristomio interno processibus angustis e membrana brevi orientibus, calyptra parva lævi.

*Hab.* Ad mont. Malabar, *G. Thomson* ! (No. 831 *b*). *M. floccoso* gracilius, ramis foliis appressis ; a *M. auronitente M. filamentosoque* habitu longe graciliore proceriore et fructu diversum.

29. M. SPICULATUM (*Mitten*). Caule repente, ramis vage subpinnatim ramosis pendulis, foliis patulis ovato-lanceolatis tenuiter acuminatis marginibus serrulatis nervo ultra $\frac{3}{4}$ evanido, cellulis elongatis sublævibus alaribus binis ternisve parvis vix conspicuis.

Pilotrichum Griffithianum, ex parte, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. trop., *J. D. Hooker et T. Thomson* ! (No. 964).

*M. lanoso* paululum gracilius, foliis strictis spiculosis patulis. *Color* in ramulorum apicibus luteo-viridis, flavescens, mox fusco-nigricans.

30. M. LANOSUM (*Mitten*). Caule repente, ramis longis flexuosis pendulis laxe subpinnatim ramosis, foliis divergentibus ovato-lanceolatis attenuatis marginibus serrulatis superne plus minus undulatis nervo ultra $\frac{3}{4}$ evanido, cellulis omnibus conformibus elongatis unipapillosis.

Pilotrichum Griffithianum, P. corrugatum, et Hypnum auronitens, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 884). In Ceylon, *Gardner* (No. 813, 936). Etiam in Hong-Kong, *Bowring* ! (et insulis Maris pacifici).

A *M. auronitente M. filamentosoque* foliis mollioribus laxioribus divergentibus diversum.

31. M. auronitens. (Hypnum, *Hook., Schw.* t. 221.—Pilotrichum filamentosum, *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! *J.D. Hooker* (No.817); Sikkim, *J. D. Hooker* (No. 933). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! In mont. Nilghiri, *M'Ivor*! *Schmid*! *G. Thomson* (No. 831).

32. M. filamentosum. (Neckera, *Hook. Musc. Exot.* t. 158.—Hypnum auronitens, *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 832, 883, 887, 932). In mont. Nilghiri, *Foulkes*!

A *M. auronitente*, quamvis persimillimum, cellulis majoribus certe recedit.

33. M. punctulatum, *C. Müller, Bot. Zeit.* 1854, p. 571.

*Hab.* In mont. Nilghiri, *Schmid.*

34. M. Schmidii, *C. Müller, Bot. Zeit.* 1854, p. 571.

*Hab.* In mont. Nilghiri, *Schmid.*

35. M. INFUSCATUM (*Mitten*). Caule repente, ramis flexuosis vage subpinnatis pendulis, foliis e basi oblongo-ovatis sensim late acuminatis marginibus dense serrulatis nervo medio evanido, cellulis elongatis alaribus paucis crassiusculis fusco limbatis pellucidis, perichætialibus internis elongatis apicibus latis lanceolatis denticulatis, theca (juvenili tantum visa) immersa, calyptra parce pilosa.

Pilotrichum phæum, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 906).

*M. phæo M. flammeoque* simillimum, foliis tamen magis oblongis, perichætialibus internis apicibus latis alienum. *Color* viridis, mox fuscescens, nitoris expers.

## 4. TRACHYLOMA, *Brid.*

1. T. INDICUM (*Mitten*). Caule seu rhizomate repente, ramis superne pinnatis frondiformibus, foliis patulis compressis ovatis apice acutis semitortis lateralibus asymmetricis, nervo sub medio evanido, margine minute serrulato, cellulis omnibus conformibus angustis.

*Hab.* In Ceylon, *Thwaites*! Etiam in Java.

*T. planifolio* gracilius, foliis laxius dispositis, cellulis laxioribus duplo latioribus obscurioribus distinctissimum. Adsunt in ramulorum apicibus, in foliorum axillis corpuscula articulata rufa.

2. T. ARBORESCENS (*Mitten*). Dioicum, caule repente, ramis erectis dendroideis inferne foliis sparsis divaricatis laxe vestitis superne in frondem horizontaliter explanatis subbipinnatim ramosis ramulis congestis attenuatis, foliis patulis late ovatis acutis, nervo tenuiusculo dorso apice dentato sub summo apice evanido, marginibus duplicato-serratis, cellulis elongatis angustis lævibus alaribus nullis.

*Hab.* In Ceylon, *Gardner* (No. 1016).

*T. Reinwardtii* simillimum et forsan ejus forma, sed foliis pro longi-

tudine latioribus minus acuminatis, cellulis paululum latioribus, etiam habitu frondium magis horizontaliter explanatis ab eo diversum esse videtur.

3. T. TAYLORI. Ramis elongatis pendulis pinnatis rigidis, foliis imbricatis e basi cordata alis rotundatis minutissime crenulatis brevi subquadrato-ovatis acuminatis apice iterum in mucronem brevem acuminatis integerrimis concavis vix carinatis, nervo sub apice evanido concolori, cellulis superne minutis subobscuris margine sæpe pallidioribus inferne elongatis pallidis.

Neckera cuspidifera, *Taylor, MSS., in Hb. Greville.*

*Hab.* ——?

Species *Trachypodibus* nonnullis Australibus affinis, sed ambitu foliorum, habitu rigidiore, coloreque in senectute magis ferrugineo certe aliena.

## 5. STEREODON, *Brid.*, ex parte.

Hypnum, Pterogonium, Leskea, Leptohymenium et Neckera, *auct.*, ex parte; Plagiothecium, Orthothecium, Pylaesia, Cylindrothecium, et (ex parte) Leskea et Hypnum, *Schimper.*

*Folia* binervia vel enervia.

### i. *Cupressina.* Rami pinnati.

#### A. *Theca* brevirostrata.

* *Peristomium* imperfectum.

1. S. juliformis. (Pterogonium julaceum, *Hook.*—P. squarrosum, *Griff. Not.* p. 448; *Icon. Plant. Asiat.* ii. t. 98. f. 11.)

*Hab.* In Himalayæ reg. trop., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 769). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 753 *b*). In Assam superiore, *Griffith*! In Moulmein, *Parish*! In mont. Nilghiri, *Schmid.*

2. S. inflexus. (Hypnum inflexum, *Harvey, Hook. Icon. Plant. Rar.* t. 24.)

*Hab.* In Nepal et Ava, *Wallich*!

Species dioica, *S. julaceo* similis, sed minor, foliis latissime ovatis acuminatis tereti-imbricatis, marginibus suberosis dorso papillosis, nervis binis brevissimis, cellulis inferioribus parvis quadratis fere ad dimidium folii protractis superioribus elongatis angustis, perichætialibus erectis apicibus lanceolatis serrulatis, theca in pedunculo elongato gracili inclinata horizontalive, operculo conico.

Folia, in icone Harveyana, uninervia et inferne minus quam in natura lata falso delineata sunt. Peristomium non vidi, sed habitu *S. juliformi* valde similis.

3. S. DECOLOR (*Mitten*). Dioicus? cæspitosus, ramis elongatis, foliis orbiculari-ovatis acuminatis patentibus, nervis binis infra medium evanidis, margine integerrimo, cellulis superioribus ad apiculi basin subellipticis inferioribus oblongis subquadratisque alaribus pluribus

transverse oblongatis parallelogrammaticis concoloribus, perichætialibus erectis elongatis convolutis acuminatis integerrimis, theca in pedunculo gracili elongato ovali erecta, peristomio dentibus angustis elongatis interno processibus brevibus $\frac{2}{3}$ dentium longitudinis in membrana ad $\frac{1}{6}$ dentium longitudinis exserta.

Pylacesia brevifolia, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker* (No. 759, 761).

Facie *Pterogonii filiformis*, habitu staturaque etiam conveniens, foliis autem latissime ovatis et cellulis brevibus copiosis.

4. S. pinetorum. (Pleuropus pterogonioides, *Griff. Not.* p. 470; *Icon. Plant. Asiat.* ii. t. 89. f. 4; *Calc. Journ. Nat. Hist.* vol. iii. p. 272, t. 20.)

*Hab.* In mont. Khasian. reg. temp., in pinetis Moflong, *Griffith*! *J. D. Hooker et T. Thomson*! fragmentum.

*Caulis* repens, ramis brevibus confertis, foliis densis patentibus ovali-ellipticis, concavis, in apiculum angustum productis, margine integerrimis inferne planiusculis, cellulis angustis alaribus pluribus.

5. S. flavescens. (Pterogonium, *Hook. Musc. Exot.* t. 155; *Griff. Icon. Plant. Asiat.* ii. t. 98. f. 4.—Fabronia striata, *C. Müller, Synops.* ii. p. 39.—Campylodontium striatum, *Dozy et Molk. Musc. Archip. Ind.* t. 39.)

*Hab.* In Himalayæ reg. temp., Nepal, *Gardner*! *Wallich*! *J. D. Hooker* (No. 760); Sikkim, *J. D. Hooker* (No. 984). In mont. Khasian., *J. D. Hooker et T. Thomson*! (No. 781). In Assam, *Griffith*!

6. S. CONDENSATUS (*Mitten*). Monoicus, caule repente ramis curvatis densis ramoso, foliis imbricatis oblongo-ovatis concavis in apiculum integerrimum subserrulatumve acuminatis basi latiusculis, nervis binis brevissimis, cellulis angustis elongatis alaribus copiosis parvis concoloribus quadratis transverseque oblongis, rameis ovatis sensim angustatis cellulis alaribus obscuris, perichætialibus erectis internis elongatis convolutis superne serrulatis, theca in pedunculo elongato rubro ovali erecta, operculo conico acuminato, peristomio interno processibus angustis ad dentium $\frac{2}{3}$ protractis in membrana ad $\frac{1}{3}$ dentium longitudinis exserta, annulo simplici.

*Hab.* In Himalayæ occid. reg. temp., Kumaon, ad Jàgesai, *Strachey et Winterbottom*!

*S. intricato* (*Pterogonium*, Schw.) simillimus, foliis autem teretiuscule imbricatis, ramis curvatis rigidulis et peristomio diversus. Species in structura foliorum transitionem a speciebus *S. julaceo* similibus in illas *S. polyantho* affiniores ostendens.

7. S. chryseus. (Orthothecium chryseum, *Bryol. Europ.* fasc. xlviii. t. 2. —Leskea aurea, vel affinis, *Wils. in Sched.*)

*Hab.* In Tibet. occid. reg. alp., alt. 16,000–17,000 ped., *T. Thomson*! (No. 1030).

8. S. aureus. (Pterogonium, *Hooker, Musc. Exot.* t. 147.—Pleuropus densus, *Griffith, Not.* p. 467; *Icon. Plant. Asiat.* ii. t. 89. f. 1, et t. 90. f. 2; *Calcutta Journ. Nat. Hist.* vol. iii. t. 17.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! *Gardner*! Sikkim, *J. D. Hooker* (No. 762). In mont. Khasian., ad Moflong, *Griffith*!

9. S. capillaceus. (Neckera, *Griffith, Not.* p. 457; *Icon. Plant. Asiat.* ii. t. 89. f. 3.)

*Hab.* In mont. Khasian. reg. temp. ad Sururem, rarus, *Griffith.*

10. S. brevirostris. (Neckera, *Griffith, Not.* p. 455; *Icon. Plant. Asiat.* ii. t. 85. f. 1, 1′, 1″.

*Hab.* In mont. Khasian., ad Sururem, in arbore, *Griffith.*

11. S. RUSSULUS (*Mitten*). Dioicus? caule repente, ramis confertis cæspitosis, foliis patentibus ovato-lanceolatis concavis, marginibus revolutis apice subserrulatis, nervis binis brevissimis obsoletisve, cellulis elongatis angustis alaribus incrassatis fuscis, perichætialibus interioribus late lanceolatis integerrimis, theca in pedunculo gracili rufo ovali erecta, operculo curvirostrato, peristomio externo fragili interno rufo incrassato e membrana brevi in processus fragilissimos divisa.

Leskea aurea, *Wils. in Sched.*

*Hab.* In Himalayæ orient., ad Sikkim, et Nepal orient. reg. temp., *J. D. Hooker*! (No. 763, 767).

*S. intricato S. aureoque* similis, sed foliis marginibus revolutis operculo subito in rostellum contracto et peristomio diversus. *Flores* masculos non inveni. *Color* russulus, nitidus.

12. S. TENUIRAMEUS. Dioicus? caule repente, ramis pinnatis confertis, foliis laxis patentibus ovatis concavis acuminatis, rameis anguste ovali-acuminatis integerrimis apiceve subserrulatis, nervis binis brevibus, cellulis elongatis angustis alaribus latis quadratis concoloribus pellucidis, perichætialibus e basi ovata lanceolatis patentibus serrulatis, theca in pedunculo elongato gracili ovali erecta, operculo conico acuminato, peristomio interno processibus sessilibus dentibus dimidio brevioribus.

Pylaesia tenella, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 770).

*S. polyantho S. subdenticulatoque* (*Pylaesiâ* auct.) minor habitu, ramulis copiosis attenuatis primo visu illis *Hypni serpentis* non dissimilibus.

13. S. RENITENS (*Mitten*). Monoicus, caule procumbente pinnato, ramis elongatis laxe cæspitosis, foliis patulis compressis strictis falcatis secundisve ovatis in acumen lanceolatum sensim angustatis concavis, nervis binis brevissimis, margine serrulato, cellulis elongatis angustis alaribus solitariis hyalinis inconspicuis, perichætialibus erectis ovalibus breviter apiculatis serrulatis convolutis, theca in pedunculo elongato

gracili rubro breviter obovata horizontali, operculo conico obtusiusculo, peristomio interno processibus dentium longitudine in membrana ad ¼ dentium exserta, annulo simplici lato.

Hypnum renidens, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, ramulos arborum investiens, alt. 12,000 ped., *J. D. Hooker* (No. 1000).

Species theca brevi horizontali a reliquis sectionis diversa, structura autem convenit. *S. incurvato* (*Hypnum* auct.) proximus.

14. S. SPECIOSUS (*Mitten*). Monoicus, cæspitosus, stramineo nitidus, foliis patentibus ovato-lanceolatis concavis in acumen elongatum subulatum angustatis, nervis binis brevissimis, margine recurvo integerrimo, cellulis angustis alaribus paucissimis parvis fuscis vix conspicuis, perichætialibus erectis elongatis convolutis acumine breviore, theca in pedunculo elongato rubro gracili tortili magna globoso-ovata erecta, operculo brevi convexo-conico abrupte in mamillam contracto, peristomio dentibus breviusculis latis pallidis interno processibus fusciculis *Bartramiæ* more fissis flexisque dentium longitudine in membrana breviter exserta, sporis magnis amorphis.

Pylacesia speciosa, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 765).

Caulis folia staturaque *Hypno salebroso* subsimilia.

15. S. EXTENTUS (*Mitten*). Monoicus, caule decumbente pinnato cæspitoso, foliis patentibus concavis ovato-lanceolatis marginibus recurvis integerrimis brevissime binervatis, cellulis elongatis angustis alaribus parvis subobscuris, perichætialibus interioribus erectis latiusculis apice denticulatis, theca in pedunculo gracili rubro ovali-cylindrica erecta, operculo conico obtusiusculo, peristomio interno e membrana ad dentium medium usque exserta deinde in processus normales divisa.

Pylacesia speciosa, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim et Nepal, *J. D. Hooker*! (No. 766, 771).

*S. specioso* paululum gracilior. *Theca* dimidio minor et pro plantæ magnitudine parva. *Peristomium* internum valde diversum. Cæterum facie generali non multum recedens.

16. S. SIMLAENSIS (*Mitten*). Monoicus, caule repente ramis brevibus conferte pinnato cæspitoso, foliis patentibus subcompressis ovali-acuminatis concavis integerrimis nervis binis brevissimis, cellulis angustis alaribus pluribus parvis obscuris concoloribus, perichætialibus erectis interioribus tribus latis elongatis apice acuminatis patentibus, theca in pedunculo rubro ovali-cylindrica inæquali inclinata.

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson*! (No. 1084).

Habitu et statura *Hypni conferti*, sed *Stereodonti extento* affinis, foliis

magis ovalibus, perichætialibus internis integerrimis, et theca, ex exemplis paucissimis vetustis, diversiformi recedens.

17. S. CAMURIFOLIUS (*Mitten*). Monoicus, caule procumbente pinnato, ramis subhorizontalibus, foliis falcatis secundis e basi contracto-ovatis sensim lanceolatis, nervis binis brevissimis, margine basi serrulato ad medium integerrimo apicem versus minute serrulato, cellulis elongatis angustis alaribus parvis omnibus obscuris, perichætium longissimum foliis latis in cylindrum convolutis apicibus brevi-lanceolatis serrulatis patulo-recurvis, theca in pedunculo longissimo rubro tortili cylindrica erecta, operculo conico acuminato, peristomio interno processibus dentium paululo longioribus e basi fere ad apicem hiante fissis fuscis in membrana ad $\frac{1}{4}$ dentium longitudinis exserta et ad dentium dimidium usque adhærentibus, annulo simplici.

*Hab.* In Nepal, *Wallich*!

Statura adspectuque *S. imponenti* similis, sed paululum gracilior et florescentia et theca longe alienus.

B. *Theca* suberecta.

** *Peristomium* normale.

18. S. crista-castrensis. (Hypnum, *Linn.*)

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 957).

19. S. imponens. (Hypnum, *Hedw.*)

*Hab.* In Himalayæ reg. temp., Sikkim., *J. D. Hooker* (No. 1063). In Kashmir, *T. Thomson*!

20. S. PERSPICUUS (*Mitten*). Monoicus, caule procumbente rubro dense pinnato, foliis falcatis secundis ovatis concavis sensim longe lanceolatis, nervis fere obsoletis, margine apice subserrulato, cellulis elongatis angustis alaribus magnis oblongis elongatisque hyalinis interioribus paucis intense croceis, perichætialibus valde elongatis, foliis externis e basi lata amplexante subulato-lanceolatis recurvis, internis erectis latis convolutis sensim acutis, theca in pedunculo elongato rubro tortili cylindrica inclinata, operculo conico.

Hypnum Molkenboerianum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 976).

*S. imponenti* valde similis, perichætio et florescentia diversus.

21. S. cupressiformis, *Brid.* (Hypnum curvulum, *Wils. in Sched.*)

*Hab.* Ad Madras, *G. Thomson* (No. 1140). In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1128). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thompson* (No. 1064).

Specimina sterilia, tamen e structura foliorum huc referenda.

22. S. propinquus. (Hypnum, *Harvey, Hooker, Icon. Plant. Rar.* t. 24.—H. curvulum, *Hooker, Icon. Plant. Rar.* t. 23. f. 7.)

*Hab.* In Nepal, *Wallich*! In Assam superiore, *Griffith*!

23. S. curvirostris. (Neckera curvirostra, *Schw.* t. 230.)

*Hab.* In Nepal, *Wallich*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1086).

24. S. CAPERATUS (*Mitten*). Dioicus, ramis elongatis cæspitosis, foliis compressis erecto-patentibus anguste ovato-lanceolatis longitudinaliter pluries undulatis, margine recurvo integerrimo apiceve subserrulato, nervis binis brevissimis, cellulis elongatis angustis alaribus pluribus parvis concoloribus quadratis pellucidis, perichætialibus erectis, theca in pedunculo elongato gracili ovali-cylindrica suberecta, peristomio interno processibus solidis dentes æquantibus, ciliis binis brevibus interpositis, in membrana ad dentium tertiam partem longitudinis exserta.

*Hab.* In Himalayæ occidentalis reg. temp., Kumaon, ad vallem Sargu, *Strachey et Winterbottom*!

Habitu staturaque *S. cupressiformi* non dissimilis, foliis autem pluries longitudinaliter undulatis.

25. S. REVOLUTUS (*Mitten*). Cæspitosus, caule procumbente pinnato, foliis falcatis secundis oblongo-ovalibus brevi-late acuminatis pluries longitudinaliter undulatis, nervis binis brevissimis, margine ubique reflexo revolutove, cellulis prosenchymaticis alaribus pluribus parvis quadratis inconspicuis.

*Hab.* In Tibet. occid. reg. alp., in summo montis Hera La, alt. 18,700 ped., *H. Strachey*!

Statura *S. curvirostris*, habitu omnino formis minoribus *S. cupressiformis* similis, foliis autem latis longitudinaliter undulatis, margine apprime reflexo, cellulis haud elongatis sed brevibus prosenchymaticis satis facile dignoscendus videtur.

*Color* pallide viridis subnitens, inferne pallide fuscus.

26. S. ERYTHROCAULIS (*Mitten*). Dioicus? caule procumbente frondiformi eleganter bipinnato rubro, foliis patentibus secundis subfalcatis ovatis sensim lanceolatis concavis plicis parvis tenuibus exaratis, nervis binis brevissimis, margine superne serrulato, cellulis elongatis angustis alaribus utrinque circiter tribus oblongo-ovalibus luteis pellucidis, perichætialibus brevibus laxe convolutis serrulatis, theca in pedunculo elongato rubro ovali-cylindrica arcuata inæquali subhorizontali, operculo conico in rostrum breve acuminato, peristomio interno processibus externo æquilongis ciliis singulis brevibus interpositis in membrana ad dentium tertiam partem longitudinis exserta.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, ad Yeumtong, alt. 12,000 ped., *J. D. Hooker*.

*Caulis* bi- triuncialis, bipinnatus, ramis semuncialibus curvatis pallidis nitentibus, speciminibus parvis *Hypni splendentis* similis.

27. S. AMBLYOSTEGUS (*Mitten*). Dioicus, cæspitosus, caule procumbente ramis brevibus pinnatim ramoso, foliis compressis strictis falcatis

secundisve ovatis sensim lanceolatis acutis concavis, nervis binis brevibus, margine inferne recurvo superne serrulato, cellulis angustis alaribus pluribus latioribus croceis externis hyalinis, perichætialibus elongatis basi latiusculis sensim lanceolato-attenuatis plicatis apice serrulatis, theca in pedunculo longissimo globoso-ovali erecta inclinatave paululum inæquali, operculo conico, peristomio interno processibus dentium longitudine ciliis binis æquilongis.

Hypnum amblyostegum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp.; Sikkim, *J. D. Hooker* (No. 972, 973, 974).

*Caulis* biuncialis, ramis circiter tri- quadri-linearibus apicem versus decrescentibus, foliis fulvis nitentibus, unde primo adspectu formas minores *Hypni fluitantis* simulat, structura foliorum autem ad hanc sectionem pertinet. *Pedunculus* biuncialis.

28. S. NICTANS (*Mitten*). Monoicus, caule repente pinnato dense cæspitoso, foliis compressis patentibus ovatis acuminatis concavis enerviis integerrimis, cellulis elongatis alaribus circiter tribus oblongis flavis, perichætialibus parvis ovato-lanceolatis serrulatis, theca in pedunculo elongato gracili erecta inclinatave ovali-cylindrica, operculo conico acuminato, peristomio interno processibus externo æquilongis ciliis singulis brevibus interpositis in membrana ad tertiam partem dentium longitudinis exserta, annulo simplici.

Hypnum nictans, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 768).

*S. lepido* similis, gracilior tamen, foliis angustioribus. Formis minoribus *S. cupressiformis* affinis.

29. S. LEPIDUS (*Mitten*). Dioicus? caule procumbente fasciculato pinnato pallido, foliis compressis late ovatis brevi-acuminatis lateralibus complicatis brevissime binervatis, margine superne serrulato, cellulis elongatis alaribus ovalibus concoloribus pellucidis circiter quatuor transverse dispositis æqualibus, perichætialibus parvis ovato-lanceolatis serrulatis vaginulam non tegentibus, theca in pedunculo elongato gracili rubro horizontali ovali inæquali, operculo subulato capsulæ dimidium æquante, peristomio interno processibus externo æquilongis ciliis binis interpositis in membrana ad quartam partem dentium longitudinis exserta.

Hypnum lepidum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1039, 1101).

Foliorum latitudine et compressione ab affinibus recedens, structura autem conveniens.

30. S. palustris, *Brid.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* (No. 954, 987).

31. S. CREPERUS (*Mitten*). Monoicus, caule longe repente filiformi laxe pinnato, foliis imbricatis late ovatis in apiculum acuminatis, nervis

binis brevibus, margine inferne planiusculo superne serrulato, cellulis elongatis alaribus vix albis conspicuis, perichætialibus erectis latis convolutis apice acuminatis serrulatis, theca in pedunculo elongato cylindrica inclinata arcuata, operculo conico acuminato.

Hypnum creperum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 1122).

Gracilis. *Caulis* biuncialis, filiformis et primo intuitu pro stolone potius quam pro planta autonoma sumendus.

32. S. CELATUS (*Mitten*). Gracilis, repens, ramis curvatis, foliis patentibus strictis subsecundisve ovalibus acuminatis concavis dorso papillosis, margine planiusculo apicem versus serrulato, enerviis, cellulis angustis alaribus paucis quadratis oblongisque pellucidis.

Leskea polyantha, *Harvey*, excl. fig. in *Hook. Icon. Plant. Rar.* t. 23. f. 3, quæ folia *S. aurei* repræsentat.

*Hab.* In Nepal, inter cæspites *S. aurei*, sterilis, *Wallich* !

Species parva, *S. pallescenti* (*Hypnum*, Sw.) habitu et statura similis.

33. S. Fabronia. (Hypnum, *Hook.*—Helicodontium, *Schw.* t. 294.)

*Hab.* In Nepal, *Wallich* !

C. *Theca* pendula.

34. S. Buitenzorgii. (Hypnum, *Bél.*)

*Hab.* In Ceylon, *Gardner* (No. 168).

35. S. ichnotocladum. (Hypnum, *C. Müller, Synops.* ii. p. 301.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim (inter cæspites *Bartramiæ longicollis* repens), *J. D. Hooker* ! (fragmenta).

36. S. COMPRESSIFOLIUS (*Mitten*). Dioicus? caule procumbente elongato, ramis æqualibus apicem versus decrescentibus plumiformi-pinnatis, foliis caulinis compressis falcatis ovatis basi truncatis sensim acutis nervis obsoletis margine superne serrulato, cellulis angustis elongatis alaribus nullis, rameis applanatis ovatis ovalibus ellipticisve lateralibus complicatis serrulatis, perichætialibus e basi subovali longe lanceolato-attenuatis integerrimis, theca in pedunculo elongato gracili ovali horizontali pendulave, operculo conico brevi-rostrato, peristomio interno processibus ciliisque binis interpositis in membrana ad quartam partem dentium longitudinis exserta.

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1049, 1091, 1166, 1179). In Assam superiore, ad Suddya, *Griffith* ! Ad Moulmein, *Parish* !

*S. ichnotoclado* similis, sed robustior. *Caulis* 2–4-uncialis, pallidus. *Folia* læte-viridia; ramea non falcata, sed deplanata.

37. S. cyperoides. (Hypnum, *Hook. Icon. Plant. Rar.* t. 23. f. 5.—H. ambiguum, *Harvey, Hook. Icon. l. c.* t. 24. f. 4.)

*Hab.* In Nepal, *Wallich* ! In Ceylon, *Thwaites* ! *et Gardner* (No. 971, 1024, 1070 *b*, 1075).

Variat foliorum latitudine, nunc foliis ovatis sensim acutis=*H. ambiguum*, nunc ovato-lanceolatis, etiam nonnunquam superne subulato-lanceolatis. Monoicus.

38. S. ROSTELLATUS (*Mitten*). Dioicus, caule procumbente, ramis brevibus approximatis pinnatis, foliis falcatis secundis ovatis in acumen lanceolatum angustatis rameis ovalibus lanceolatisque brevissime binervatis marginibus serrulatis, cellulis angustis elongatis alaribus inconspicuis, perichætialibus erectiusculis longe attenuatis remote serrulatis, theca in pedunculo elongato rubro ovali horizontali, operculo conico rostello angusto, peristomio processibus dentium longitudine ciliis binis ut plurimum in unum coalitis brevioribus in membrana ad $\frac{1}{4}$ dentium longitudinis exserta.

*Hab.* In Himalaya temperata, Nepal, *Wallich* ! *et J. D. Hooker* ! (No. 1067).

*Folia*, quamvis fere ejusdem formæ ac in *S. cyperoide* (quocum habitu et statura valde est affinis), minus depressa. *Caulis* minus regulariter pinnatus.

39. S. CYGNICOLLUM (*Mitten*). Monoicus, caule procumbente pinnato, foliis subcompressis subfalcatis subsecundis ovatis sensim lanceolato-attenuatis concavis, nervis binis paulo infra medium evanidis margine serrulato paululum recurvo, cellulis angustis elongatis alaribus paucis una tantum majore hyalina, perichætialibus patulis longius attenuatis serrulatis, theca in pedunculo elongato rubro apice curvato ovali horizontali pendulave, operculo brevi conico acuto, peristomio processibus ciliisque solitariis dentium longitudine in membrana ad tertiam partem dentium longitudinis exserta.

*Hab.* In Himalayæ orient. reg. temp., inter *Leskeas capillatas*, Sikkim, *J. D. Hooker* ! (No. 1123).

*S. cyperoidi* simillimus, sed foliis minus compressis, nervis longioribus.

40. S. CLARESCENS (*Mitten*). Dioicus? cæspitosus, caule elongato procumbente, ramis arcuatis irregulariter pinnatis, foliis paululum compressis patentibus subimbricatis ovatis acuminatis nervis binis infra medium evanidis marginibus superne serrulatis undulatisque, cellulis angustis alaribus inconspicuis, perichætialibus ovatis longe subulatis, theca in pedunculo longissimo apice curvato ovali horizontali, operculo conico acuminato, peristomio interno processibus dentium longitudine ciliis binis brevioribus interpositis in membrana ad $\frac{2}{5}$ dentium longitudinis exserta.

Hypnum clarescens, affine H. serrato *Beauv.* (an H. malacobolum *C. Müller*?), *Wils. in Sched.*

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson* (No. 1064 *b*).

*Caulis* biuncialis. Habitu adspectuque *S. Nepalensis*, sed robustior.

41. S. Nepalensis. (Hypnum, *Hook.*)

*Hab.* In Nepal et in collibus "Garrow Hills" Bengaliæ, *Wallich* !

42. S. punctulatus. (Hypnum, *Harvey, Hook. Icon. Plant. Rar.* t. 23. f. 10.)

*Hab.* In India orient., *Wallich*! Ad Madras, *Wight*!

43. S. LEIOPHYLLUS (*Mitten*). Monoicus, foliis compressis ovato-lanceolatis subserrulatis breviter binervatis, cellulis angustis lævibus, perichætialibus patulis lanceolatis serrulatis, theca in pedunculo elongato parva ovali inæquali horizontali pendulave.

*Hab.* In Ceylon, *Gardner*!

*S. punctulato* simillimus, sed foliis cellulis haud punctulatis et statura minore differt.

44. S. stissophyllus. (Hypnum, *Hampe*.)

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1071 *b*). In Ceylon, *Gardner* (No. 1026).

45. S. TUBERCULATUS (*Mitten*). Monoicus, caule repente pinnato, ramis brevibus assurgentibus, foliis undique patentibus ovato-lanceolatis sensim acuminatis integerrimis enerviis, cellulis elongatis angustis alaribus nullis, perichætialibus lanceolatis suberectis integerrimis, theca in pedunculo breviusculo lævi ovali cellulis prominentibus subtuberculatove flexura pedunculi horizontali cernuave, operculo conico acuminato, peristomio interno ciliis nullis?

*Hab.* In Ceylon insula, *Gardner*.

Habitu fere *S. punctulati*.

46. S. reticulatus, *Dozy et Molk.* (Hypnum scintillans, *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 977, 1067 ex parte). In Assam superiore, *Griffith*!

47. S. SUCCOSUS (*Mitten*). Monoicus, caule prostrato subpinnato, foliis patentibus compressis asymmetricis ovatis longiuscule tenuiter acuminatis planiusculis margine paululum recurvo apicem versus minute serrulato apiculo lævi, nervis binis pallidis brevibus, cellulis oblongis laxis, perichætialibus e basi suberecta lata longe subulato-attenuatis patulis apice subserrulatis, theca in pedunculo rubro oblonga nutante, operculo depresso conico brevi-rostrato.

Hypnum vesiculare, *Wils. in Sched.*

*Hab.* In Nepal orient. reg. temp., *J. D. Hooker* (No. 1038).

*S. reticulato* similis, sed foliis acumine longiore et cellulis paululum longioribus.

D. *Theca* longirostrata.

48. S. orthothecius. (Hypnum, *Schw.* t. 220.—Leskea secunda, *Hook. Icon. Plant. Rar.* t. 23. f. 1.)

*Hab.* In Nepal, *Wallich*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1090).

*Folia* ovali-lanceolata, margine recurvo; cellulæ alares paucissimæ. *S. cæspitoso* (*Leskea*, Swartz) similis, sed minor.

49. S. TRISTICULUS (*Mitten*). Monoicus, caule repente ramis brevibus subpinnatim ramoso, foliis patentibus oblongo-ovatis cochleariformi concavis margine plano integerrimo nervis binis brevissimis obsoletisve, cellulis angustis alaribus trinis pallidis, perichætialibus erectis longioribus integerrimis, theca in pedunculo brevi fusco ovali suberecta, peristomio dentibus latiusculis luteis processibus æquilongis ciliis nullis.

Hypnum sphærotheca, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1087). In Assam superiore, *Griffith* ! In Ceylon, *Gardner* (No. 1034).

*S. Kegeliano* (*Hypnum*, C. Müller) similis, parum robustior, sordide luteo-viridis.

50. S. CONFERTISSIMUS (*Mitten*). Monoicus, humilis, cæspitosus, foliis patentibus ovatis acutis marginibus superne serrulatis basi incurvis amplexantibus nervis binis brevissimis, cellulis elongatis angustis alaribus utrinque circiter tribus, perichætialibus lanceolatis elongatis erectis, theca in pedunculo breviusculo ovali nutante, operculo subulato-rostrato theca longiore.

*Hab.* In Assam superiore (mont. Khasian. ?) ad Moosmai, *Griffith* !

*S. orthothecio* minor, foliorum cellulis alaribus distinctis diversus. *Rami* circiter trilineares. *Pedunculus* quadrilinearis.

51. S. Harveyanus. (Leskea curvirostra, *Harvey, Hook. Icon. Plant. Rar.* t. 20. f. 1.)

*Hab.* In Nepal, *Wallich* !

52. S. humilis. (Hypnum humile, *Harvey, Hook. Icon. Plant. Rar.* t. 23. f. 9.)

*Hab.* In Nepal, *Wallich* !

53. S. subhumilis. (Hypnum, *C. Müller, Synops.* ii. p. 330.)

*Hab.* In Mont. Nilghiri, *Perrottet* !, *Schmid.*

54. S. brachypelma, *C. Müller, Synops.* ii. p. 404. (Hypnum microcarpum, *Hook. Icon. Plant. Rar.* t. 23. f. 4.)

*Hab.* In Nepal, *Wallich.*

55. S. leptocarpus. (Hypnum. *Schwægr.* t. 316.)

*Hab.* In Ceylon, *Gardner* (No. 1044, 1066). Etiam in Java, *Reinwardt* !

56. S. rostratus. (Neckera, *Griff. Not.* p. 456; *Icon. Plant. Asiat.* ii. t. 87. f. 1.)

*Hab.* In mont. Khasian. reg. temp. *J. D. Hooker et T. Thomson* (No. 779, 1029). In sylvis ad Myrung, *Griffith* !

Species monoica, cæspitosa, foliis imbricatis congestis ellipticis paululum acuminatis concavis dorso lævibus margine plano integerrimo angusto recurvo brevissime binervatis, cellulis elongatis angustis alaribus inferioribus oblongis parallelogrammaticis superioribus rotundatis fusci-

dulis, perichætialibus lanceolatis sensim angustatis erecto-patentibus, theca in pedunculo elongato ovali-cylindrica erecta inclinatave, operculo subulato subæquilongo, peristomio ?

57. S. GLAUCO-VIRENS (*Mitten*). Monoicus, cæspitosus, habitu *S. rostrati*, foliis ellipticis breviter acuminatis apice subtortis dorso papillosis margine plano superne serrulato nervis binis brevissimis, cellulis angustis alaribus majoribus elongato-oblongis in serie unica transverse ad basin tantum dispositis fuscidulis, perichætialibus erecto-patentibus ovatis acumine late lanceolato subobtuso argute serrulato, theca in pedunculo breviusculo superne ruguloso parva ovali horizontali.

Leskea, No. 5, *Griffith.*

*Hab.* In Assam superiore, ad Gowgong, *Griffith* !

*S. rostrato* minor, opacior, foliis dorso papillosis margine serrulatis et theca horizontali diversus.

58. S. LEPTORHYNCHOIDES (Hypnum, *Mont. in litt.*). Monoicus, habitu *S. leptorhynchi*, caule rubro, foliis e basi ovato-lanceolata sensim longe attenuatis superne serrulatis margine uno latere recurvo, cellulis angustis alaribus trinis quaternisve magnis fuscis, perichætialibus erecto-patulis curvatis elongatis angustis serrulatis, theca in pedunculo elongato rubro ovali horizontali pendulave, peristomio dentibus luteis valde trabeculatis interno processibus æquilongis ciliis singulis (?) interpositis.

*Hab.* In mont. Nilghiri, *Perrottet* !

Species ab affinibus, foliis perichætialibus longe lanceolatis attenuatis serrulatis, recedens.

## ii. *Plagiothecium*, Schimp.

59. S. PALEACEUS (*Mitten*). Dioicus? ramis basi procumbentibus arcuatis parce ramosis, foliis subsecundis patulis planiusculis orbiculari-ovatis acutis nervis brevissimis margine integerrimo, cellulis elongatis angustis alaribus laxioribus brevioribus hyalinis in caule utrinque decurrentibus, perichætialibus erectis brevibus oblongis apiculatis, theca in pedunculo elongato gracili ovali-cylindrica erecta, operculo conico acuminato, peristomio pallido interno processibus solidis in membrana ad dentium tertiam partem longitudinis exserta.

Leskea paleacea, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker* (No. 1006, 1007, 1075).

Pallide stramineus nitidus. *Rami* unciales. *Folia* brevia, ad unum latus spectantia. A reliquis *Plagiotheciis*, foliis orbiculari-acuminatis, facile cernendus.

60. S. neckeroideus. (Plagiothecium, *Schimp. Bryol. Europ.*)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 1008, 1010, 1048).

61. S. Donianus. (Hypnum, *Smith.*)
*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 1005).

62. S. denticulatus, *Brid.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1009).

63. S. NEMORALIS (*Mitten*). *S. sylvatico* simillimus, sed foliis elliptico-ovatis latioribus, cellulis paululum minoribus.
*Hab.* In Himalayæ orient. reg. temp., Sikkim, in monte Tonglo (ad radicem filicis cujusdam), *J. D. Hooker*!

### iii. *Taxicaulis*, C. Müller.

64. S. LIGNICOLA (*Mitten*). Monoicus, laxe stratus, ramis decumbentibus simplicibus, foliis patentibus ovatis longe tenuiter subulato-acuminatis enerviis integerrimis, cellulis teneris angustis albidis alaribus vix distinctis, perichætialibus lanceolatis subulatis patulis, theca ovali æquali flexura pedunculi gracili horizontali, ore magno, peristomio interno ciliis solitariis brevibus.
*Hab.* In Moulmein (in arborum truncis emortuis), *Rev. D. Parish*!
Species pusilla, habitu staturaque *S. albescentis*, foliis tamen sensim longe acuminatis haud compressis, et theca æquali pedunculi flexura horizontali.

65. S. albescens. (Hypnum, *Schw.* t. 226.)
*Hab.* In Nepal, *Wallich*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1079). In mont. Nilghiri, *Schmid.*

66. S. ASSAMICUS (*Mitten*). Monoicus, parvulus, foliis ovatis asymmetricis acuminatis brevissime binervatis margine integerrimo, cellulis elongatis angustis alaribus inconspicuis, perichætialibus patulis tenuiter longo-acuminatis integerrimis, theca in pedunculo elongato parva ovali horizontali, operculo conico.
*Hab.* In Assam, *Griffith*!
*S. albescenti* valde similis, sed foliis apiculo breviore latiore et margine integerrimo.

67. S. LONGITHECA (*Mitten*). Dioicus, caule procumbente ramoso laxe cæspitoso, foliis compressis patulis ovatis sensim acutis enerviis margine superne parce subserrulatis, cellulis angustis elongatis alaribus utrinque quaternis elongatis latis pellucidis, perichætialibus laxis erectis superne serrulatis, theca in pedunculo elongato suberecta inclinatave cylindrica, operculo conico-subulato, peristomio interno processibus dentium longitudine ciliis unicis brevioribus interpositis in membrana ad $\frac{1}{4}$ dentium longitudinis exserta.
Hypnum nictans, var., *Wils. in Sched.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim (in arborum ramis putridis). *J. D. Hooker* (No. 1152).

*S. albescenti* affinis, sed foliis acumine breviore cellulis alaribus distinctis et theca cylindrica recedens.

68. S. PALLIDULUS (*Mitten*). Monoicus, caule procumbente ramoso, foliis compressis laxis pallidis ovatis sensim acutis, nervis binis brevissimis integerrimis, cellulis elongatis angustis, perichætialibus ovatis subulato-attenuatis recurvis, theca in pedunculo elongato ovali horizontali, operculo conico, peristomio interno processibus externo æquilongis ciliis binis breviusculis interpositis in membrana ad $\frac{1}{3}$ dentium longitudinis exserta.

*Hab.* In Himalaya occid., Kumaon, ad terram, *Strachey et Winterbottom*!

*Caulis* semuncialis, prostratus, gracilis. Statura *S. albescenti* subsimilis, foliis nitidis remotioribus et operculo breviore.

69. S. DISTICHACEUS (*Mitten*). Monoicus, prostratus, caule vage ramoso, ramis elongatis, foliis distichaceo-compressis divergentibus elliptico-lanceolatis plænis apice serrulatis parum asymmetricis enerviis, cellulis elongatis angustis alaribus nullis, perichætialibus parvis lanceolatis vaginam vix tegentibus integerrimis, theca in pedunculo elongato parva ovali horizontali, operculo conico, peristomio processibus ciliisque æquilongis interpositis.

*Hab.* In Nepal, *Wallich*! In Himalaya boreali-occident., *Royle*!

*S. deplanato* (*Hypnum*, Schimp.) habitu similis, sed foliis angustioribus.

70. S. TAXIRAMEUS (*Mitten*). Dioicus? prostratus, caule vage ramoso, foliis distichaceo-compressis divergentibus e basi asymmetrica ovato-lanceolatis subplanis nervis binis ad $\frac{1}{3}$ evanidis margine ubique serrulato, cellulis angustis alaribus nullis, perichætialibus parvis lanceolatis subulato-attenuatis subserrulatis, theca in pedunculo elongato parva ovali horizontali.

*Hab.* In Himalayæ reg. temp., Simla et Kumaon, *T. Thomson*! (No. 1008, 1023 *b*). In Nepal, *J. D. Hooker*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! In Assam superiore, *Griffith*! In Ceylon, *Gardner*!

Præcedenti habitu staturaque simillimus, sed foliorum forma, nervis, et florescentia, ut videtur, diversus.

71. S. IVOREANUS (*Mitten*). Caule procumbente, ramis vagis, foliis patulis compressis deplanatis ovato-linguæformibus obtusissimis paulum asymmetricis nervis binis brevibus margine apice argute serrulato, cellulis omnibus angustis elongatis.

*Hab.* In Nepal, *Wallich*! In mont. Nilghiri, *McIvor*.

Primo visu *Omaliæ trichomanoidi* statura coloreque similis, sed foliorum structura cellulis linearibus alienus. A *S. lancifolio* foliis brevioribus cellulis alaribus nullis diversus.

### iv. *Cuspidaria.*

*Rami* foliis pungentibus cuspidati.

72. S. turgidus. (Hypnum, *Dozy et Molk. Ann. des Sc. Nat.* 1844, ii. p. 809.—H. hyalinum, *Wils. in Sched.*)
*Hab.* In Ceylon, *Gardner* (No. 785, 786).

73. S. præmollis. (Hypnum, *C. Müller, Synops.* ii. p. 671.—Leskea cirrhifolia, *Wils. in Sched.*)
*Hab.* In Ceylon, *Gardner*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 774, 854).

74. S. Braunii. (Hypnum, *C. Müller, Synops.* ii. p. 687.—H. hyalinum, *Wils. in Sched.*)
*Hab.* In Ceylon, *Gardner* (No. 784).

75. S. ACUTIRAMEUS (*Mitten*). Monoicus, caule cæspitoso vage pinnato, ramis cuspidatis, foliis patentibus laxe imbricatis elliptico-ovatis sensim acutis integerrimis enerviis, cellulis elongatis alaribus circiter quinis elongatis coloratis, perichætialibus erectis superne serrulatis, theca in pedunculo elongato superne ruguloso eroso suberecta ovali, operculo longirostrato.
*Hab.* In Ceylon, *Gardner*! In mont. Khasian., ad Moflong, in pinetis, *Griffith*!
S. *Braunii* simillimus, sed foliis angustioribus et florescentia diversa.

76. S. Gedeanus. (Hypnum, *C. Müller, Synops.* ii. p. 390.)
*Hab.* In Ceylon, *Gardner*!

### v. *Cylindrothecium*, Schimp.

77. S. ANGUSTIFOLIUS (*Mitten*). Ramis pinnatis, foliis compressis patentibus, anguste ovato-lanceolatis in apicem angustum attenuatis basi contractis margine integerrimis uno latere complicato-inflexis nervis binis brevibus, cellulis elongatis alaribus paucis quadratis pellucidis pallidis inconspicuis, perichætialibus erectis strictis late lanceolatis convolutis anguste acuminatis.
*Hab.* In Himalayæ orient. reg. temp., Sikkim, alt. 9000 ped., in monte Lachen (*Ptychantho striato* irrepens), *J. D. Hooker*!
S. *macropodo* (*Neckera* auct.) similis, sed foliis longioribus apice angustioribus.

78. S. plicatus. (Neckera plicata, *C. Müller, Synops.* ii. p. 60.—Pterogonium aureum, *Griff. Not.* p. 449, ex specimine in Herb. Ward.)
*Hab.* In Himalaya temp., Nepal, *Wallich*! *J. D. Hooker* (No. 738, 746); Sikkim, *J. D. Hooker* (No. 745, 747, 750); in reg. trop. (No. 721). Kumaon, *Strachey et Winterbottom.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 731, 743, 744, 748, 753). In Assam, *Griffith*! In mont. Nilghiri, *Perrottet*! *Mc Ivor*! *Schmid.* Ad Madras, *Wight*! In Ceylon, *Gardner* (No. 755).

79. S. LÆTUS (*Mitten*). **Monoicus, caule ramis brevibus pinnato, foliis compressis patentibus laxe imbricatis ovato-ellipticis acutis concavis lateralibus complicatis basi latiusculis, nervis binis brevibus, marginibus integerrimis, cellulis elongatis angustis alaribus pluribus quadratis pallidis pellucidis, perichætialibus erectis basi convolutis latiusculis apice acuminatis obtusiusculis, theca in pedunculo elongato rubro cylindrica, operculo subulato-rostrato, peristomio dentibus brevibus processibus dimidio brevioribus.**

Neckera læta, *Griff. Not.* p. 459; *Icon. Plant. Asiat.* ii. t. 87. f. 7.?—N. nitida, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 756).

***Rami* biunciales, tenelli; ramuli bi- trilineares. Plantam Griffithianam non vidi, sed, e descriptione et icone, cum speciminibus No. 756 satis convenire videtur.**

80. S. Gardneri. (Pterogonium myurum, *Hook. Musc. Exot.* t. 144.)

*Hab.* In Himalaya temperata, Nepal, *Gardner*! Kumaon, *Strachey et Winterbottom*! *T. Thomson*! Simla, *T. Thomson* (No. 735, 735 *b*, 736, 737) *et Royle*!

81. S. PROREPENS (*Mitten*). **Monoicus, caule elongato iterum iterumque arcuato radicante ramis flexuosis curvatis pinnato, foliis late ovatis acutis integerrimis brevissime binervatis concavis, cellulis angustis elongatis alaribus pluribus brevibus pallidioribus per folii basin transverse protractis, perichætialibus internis erectis e basi lata ovata lanceolatis subintegerrimis, theca in pedunculo rubro cylindrica interdum arcuata ætate plicata, operculo conico rostrato, peristomio externo dentibus fuscis interno processibus luteis e membrana brevissima orientibus.**

*Hab.* **In Himalaya temperata, Nepal, *Wallich*! *J. D. Hooker*! (No. 752). Kumaon, *Royle*! *T. Thomson* (No. 777 *b*). In Assam, *Griffith*!**

*S. myuro* **simillimus, sed gracilior minusque procerus, foliis cellulis alaribus per basin protractis, quæ in foliis *S. myuri* ad angulos tantum aggregatæ suut.**

82. S. THOMSONI (*Mitten*). **Monoicus, caule procumbente ramis curvatis pinnatim ramoso, foliis ovali-oblongis acutis integerrimis concavis breviter binervatis, cellulis angustis elongatis alaribus pluribus parvis quadratis concoloribus, perichætialibus e basi late ovata lanceolatis integerrimis patulis, theca in pedunculo rubro ovali-oblonga erecta interdum arcuata, operculo conico rostrato, peristomio externo dentibus rubris interno processibus paulum brevioribus angustis luteis e membrana angustissima orientibus, annulo simplici, columella exserta.**

Neckera myura, var., *Wils. in Sched.*

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson*! (No. 777) *et Royle*!

Habitu fere *S. prorepentis*, sed structura foliorum caulinorum et perichætii etiam peristomii diversus.

83. S. RUBICUNDUS (*Mitten*). Foliis teretiuscule imbricatis ambitu ovatis acutis basi subito angustatis breviter binervatis ut plurimum uno latere complicato-inflexis superne subserrulatis, cellulis elongatis angustis alaribus pluribus parvis quadratis oblongisve pallidis pellucidis mollibus, perichætialibus ovato-lanceolatis erectis apicibus patulis superne subserratis, theca in pedunculo longissimo rubro cylindrica erecta, operculo conico rostrato, peristomio dentibus elongatis angustis rubro-aurantiacis processibus concoloribus dentibus triente brevioribus, annulo simplici.

Neckera flavescens, *Hook. Trans. of Linn. Soc. Lond.* ix. p. 314, t. 27. f. 2.—Cylindrothecium rubicundum, *Wils. in Sched.*—N. coarctata, *C. Müller*, ex parte, *Synops.* ii. p. 69.—N. rubicunda, *Wils. in Sched.*

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 751). In Assam, *Griffith*!

*S. Montagnei* (*Cylindrothecium*, Schimp.) valde similis, sed foliis acutioribus.

84. S. CALIGINOSUS (*Mitten*). Habitu facieque *S. Hookeri*, foliis ovatis obtusiusculis iis *S. Montagnei* similibus, cellulis autem dimidio brevioribus alaribus obscuris.

Cylindrothecium Montagnei, var., *Wils. in Sched.*

*Hab.* In Nepal orient. reg. temp., *J. D. Hooker*! (No. 751 *b*).

Species distincta, cujus specimina pauca incompleta tantum vidi.

85. S. SCHWÆGRICHENI (*Mitten*). Monoicus, ramis bipinnatis ramulis elongatis divaricatis, foliis ovatis basi subito angustatis apice sensim in acumen lanceolatum attenuatis concavis nervis binis brevissimis margine integerrimo, cellulis elongatis angustis alaribus pluribus quadratis pallidis pellucidis, perichætialibus basi ovalibus subulato-lanceolatis integerrimis, theca in pedunculo breviusculo pallido cylindrica, operculo conico acuminato, peristomio dentibus rubris processibus brevioribus, annulo simplici.

Neckera flavescens, *Schwægr.* t. 141.—N. coarctata, *C. Müller, Synops.* ii. p. 69.

*Hab.* In Nepal, *Wallich.*

Habitu e ramulis elongatis divaricatis a *S. Hookeri* recedens; foliis apice lanceolatis subacuminatis et florescentia satis distinctus.

86. S. GRIFFITHII (*Mitten*). Dioicus, foliis late ovatis paululum acuminatis acutis margine subserrulatis nervis binis brevissimis, cellulis angustis alaribus pluribus quadratis pallidis pellucidis, perichætialibus e basi ovali erecta subulato-lanceolatis integerrimis patulis, theca in pedunculo elongato rubro cylindrica ætate plicata, operculo conico rostrato, peristomio *S. Hookeri*.

*Hab.* In Assam superiore, *Griffith*!

*S. Hookeri* valde affinis, sed paululum gracilior, foliis latioribus basi minus subito angustatis minus complicatis apiceque paululum acuminatis.

87. S. curvatus. (Neckera, *Griff. Not.* p. 451; *Icon. Plant. Asiat.* ii. t. 86. f. 1.)

*Hab.* In mont. Khasian. reg. temp., ad Bogapanee, in rupibus prope torrentem, *Griffith.*

88. S. luridus. (Neckera, *Griff. Not.* p. 452.)

*Hab.* In mont. Khasian. reg. temp., ad Surureem, rupestris, *Griffith.*

89. S. pulchellus. (Neckera, *Griff. Not.* p. 453; *Icon. Plant. Asiat.* ii. t. 87. f. 6.)

*Hab.* In mont. Khasian. reg. temp. in sylvis Mumbree, *Griffith.*

90. S. comes. (Neckera, *Griff. Not.* p. 458; *Icon. Plant. Asiat.* t. 86. f. 2.)

*Hab.* In mont. Khasian. frequens, *Griffith*! In Ceylon, *Gardner*! In Himalayæ orient. reg. alp., Sikkim (No. 776), et in reg. temp. (No. 881), *J. D. Hooker.*

Pulcherrimus, stramineo-fuscus, nitidus, ramis laxe pinnatis, foliis laxis patentibus ovali-ellipticis acutis acuminatisve, inflexura marginis subtubulosis indistincte binervatis margine superne serrulatis, cellulis angustis alaribus paucis parvis fuscis, perichætialibus erectis e basi laxe convoluta lanceolatis apice serrulatis, theca in pedunculo brevi gracili ovali erecta, operculo (ex Griffithio) subulato curvato, peristomio interno processibus angustis dentibus brevioribus papillosis in membrana brevissima subsessilibus, calyptra cucullata.

Hujus speciei specimina authentica paucissima vidi; Hookeriana non omnino inter se et cum Griffithianis congruunt. An ad species diversas affines, an ad unam variantem pertinent, e materia elucidari nequit.

91. S. FULVONITENS (*Mitten*). Caule elongato flexuoso vage pinnato, foliis laxe imbricatis late ovatis apice latiusculo-rotundatis inflexura marginum concavis, margine basi anguste recurvo apice minute serrulato, nervis binis infra medium evanidis, cellulis angustis alaribus vix ullis.

*Hab.* In Nepal, *Wallich*!

Pulchre stamineo-fuscus, nitidus; statura in specimine unico triuncialis; ramis uncialibus crassitudine *Leskeæ molli* (Hedw.) similis, sed colore *L. flexilis* (Hedw.) et *Neckeræ comitis* (Griff.). Foliorum forma iis *Cylindrothecii Montagnei* (Schimp.) fere exacte congruit; sed, caule vel vagante vel pendulo flexuoso ex habitu et structura speciei, *S. comiti* affinis videtur.

92. S. NUBIGENA (*Mitten*). Ramis cæspitosis laxe pinnatis, foliis patulis elliptico-ligulatis concavis apice apiculo recurvo mucronatis nervo unico sub apicem evanido, cellulis angustis elongatis alaribus parvis brevibus pallidioribus.

Hypnum sarmentosum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 1045).

A *S. sarmentoso*, primo adspectu maxime similis, foliis angustis apiculo recurvo mucronatis cellulis longioribus alaribusque parvis fere homomorphis certe distinctus.

93. S. Schreberi. (Hypnum, *Willd.*—H. macilentum, *Wils. in Sched.*)
*Hab.* In Himalayæ orient. reg. alp., Sikkim, *J. D. Hooker* (No. 1164).
Sterilis. A forma vulgari Europæa vix, nisi ramis gracilioribus, differt.

### vi. *Symphyodon*, Mont.

94. S. Perrottetii. (Symphyodon, *Mont. Syllog.* p. 20.)
*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid*! In Ceylon, *Gardner* (No. 756) *et Thwaites*!

95. S. lancifolium. (Neckera, *Harvey, Hook. Icon. Plant. Rar.* t. 21. f. 5.)
*Hab.* In Nepal, *Wallich*!

96. S. angustus. (Neckera, *C. Müller, Synops.* ii. p. 67.)
*Hab.* Ad Bombay, *Kegel.*

97. S. ERINACEUS (*Mitten*). Dioicus, caule——? ramis subpinnatis laxis, foliis oblongo-ellipticis oblongo-ovatisve marginibus superne tenuissime serrulatis basin versus paululum recurvis breviter binervatis, cellulis angustis lævibus conformibus, perichætialibus lanceolatis patentibus, theca in pedunculo gracili rubro aspero ovato-oblonga echinata.
Symphyodon Perrottetii, var., *Wils. in Sched.*
*Hab.* In mont. Khasian. reg. trop., *J. D. Hooker et T. Thomson* (No. 833).
*S. angusto* major, procerior, foliis superne latioribus ramulinis elongato-ovalibus obtusiusculis.

98. S. ASPER (*Mitten*). Dioicus? caule repente, ramis pinnatis ramulis inordinatim elongatis, foliis elongato-ovatis obtusiusculis marginibus superne serrulatis nervis binis brevibus, ramulinis enerviis, cellulis elongatis lævibus conformibus, perichætialibus erectis lanceolato-subulatis serrulatis, theca in pedunculo gracili rubro superne scabro ovali-cylindrica operculoque conico rostrato spiculis brevibus aspero, peristomio externo dentibus lævibus tenuiter elongatis interno processibus fuscis angustissimis ad dentium dimidium attingentibus, membrana basilari subnulla, annulo parvo composito.
Symphyodon Perrottetii, var., *Wils. in Sched.*
*Hab.* In mont. Khasian. reg. trop., *J. D. Hooker et T. Thomson*! (No. 772, 866).
*S. Perrottetii* gracilior, ramulis inordinatis magis confertis.

99. S. ECHINATUS (*Mitten*). Dioicus, caule repente, ramis bipinnatim ramosis dendroideis, foliis patentibus latissime ovatis fere ad medium binervatis marginibus superne serrulatis ramulinis magis concavis breviter nervatis, cellulis angustis dorso papilloso-scabris, perichæ-

tialibus erecto-patentibus lanceolatis serrulatis, theca in pedunculo elongato rubro superne scabro ovali-cylindrica ubique spiculosa, peristomio dentibus tenuiter elongatis processibus angustis pallidis ultra medium dentium protractis iisque adhærentibus.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 734).

A speciebus alteris ramis pluriramulosis compactioribus et peristomio interno externo adhærente recedit.

100. S. ERRATICUS (*Mitten*). Caule procumbente bi- tripinnatim ramoso sæpe ramis vagis elongatis gracili, foliis caulinis erecto-patentibus late ovato-lanceolatis nervis binis infra medium evanidis margine serrulato inferne recurvo rameis ramulinisque ovatis brevi binervatis serrulatis, cellulis angustis dorso sparse papillosis.

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! *J. D. Hooker* (No. 1067), Sikkim, *J. D. Hooker*. In Ceylon, *Gardner*!

*Caulis* inter muscos longe repens vage ramosus, foliis compressiusculis rufo-fusco tinctis subnitentibus. *S. aspero* statura similis, sed foliis caulinis magis ovato-lanceolatis, ramulinis nervatis.

101. S. PLANULUS (*Mitten*). Caule repente, ramis frondiformibus bipinnatis ramulis sæpe attenuatis microphyllis, foliis patentibus ovato-lanceolatis subulato-acutis integerrimis marginibus fere oblique reflexis nervis binis brevissimis, perichætialibus parvis erecto-patentibus conformibus, theca in pedunculo gracili tortili flexuoso ovata subglobosave, operculo conico brevi-rostrato, peristomio dentibus pallidis processibus angustis æquilongis e membrana brevi ortis.

Lescurea marginata (forsan Neckera clastobryum), *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., *J. D. Hooker* (No. 764). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 753 *b*).

Primo adspectu formis brevibus *Neckeræ complanatæ* subsimilis. Lævitate thecæ et pedunculi a congeneribus similibusque recedit, cæteroquin structura convenit. Planta caulibus rubris, foliis aureo-nitentibus, ramis nonnullis apice corpuscula articulata in foliorum axillis ferentibus. *Folia* non marginata. A *Clastobryo Indico* (Dozy et Molk.) longe diversus.

vii. *Isothecium*, Schimp., ex parte.

102. S. ORIENTALIS (*Mitten*). Dioicus, ramis erectis inferne nudis superne dendroideis fasciculato-ramosis, foliis patentibus remotiusculis distichaceis ovalibus acutis superne serrulatis nervis binis brevibus, cellulis elongatis angustis, perichætialibus erectis lanceolatis serrulatis, theca in pedunculo elongato brevi-ovali horizontali, peristomio normali?

Hypnum confertum, *Griff.*

*Hab.* In Assam superiore, *Griffith*!

Species parva, ramis uncialibus sparse foliosis. *Pedunculus* uncialis.

Primo adspectu speciebus parvis *Thamnii* similior, sed structura

foliorum omnino hujus gregis, et *Isothecii* Indici exemplum primum constituens.

### viii. *Hylocomium*, Schimp.

* *Folia* longe acuminata.

103. S. SURCULARIS (*Mitten*). Dioicus? caule procumbente pinnato, ramis simplicibus vel fasciculato-pinnatis brevibus confertis attenuatis cuspidatis, foliis patentibus concavis e basi late ovali in acumen longum angustum vix serrulatum subito angustatis enerviis margine planiusculo, cellulis elongatis alaribus magnis fuscis pellucidis, perichætialibus lanceolatis, theca in pedunculo longissimo gracili ovali inclinata, peristomio dentibus brevibus luteis processibus æquilongis ciliis unicis latiusculis brevioribus interpositis.

Hypnum extenuatum, var., *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1031).

Habitu *S. extenuati*, sed compactior et rigidior, ramis fere omnibus attenuato-cuspidatis, foliis margine planiusculis. *Theca* in pedunculo sub-biunciali parva.

104. S. lanytrichus. (Hypnum, *Dozy et Molk.*—H. barbatum, *Wils. in Sched.*)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 975, 1100).

105. S. PENICILLATUS (*Mitten*). Dioicus, caule rubro cæspitoso ramis dendroideis pinnatis curvatis fasciculatis prolifero, foliis patentibus orbiculari-ovalibus obtusis apiculo angusto piliformi flexuoso elongato terminatis inflexura marginum concavis enerviis apice apiculum versus serrulatis, cellulis angustis elongatis alaribus magnis utrinque tribus oblongis luteis, perichætialibus parvis vaginam non tegentibus ovatis acuminatis serrulatis, theca in pedunculo elongato rubro ovali-cylindrica inclinata horizontalive, operculo rostrato longitudine thecam dimidiam æquante, peristomio interno processibus solidis dentium longitudine ciliis binis brevioribus interpositis in membrana ad tertiam partem dentium longitudinis exserta.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 778, 1035, 1040, 1074).

Species pulchra, foliis pallidis hic illic aureo-fulvo tinctis, ramis fasciculatis curvatis.

106. S. PSILURUS (*Mitten*). Caule repente, ramis dendroideis bipinnatis ramulis ad unum latus spectantibus curvatis, foliis rameis erecto-patentibus ovatis tenui-acuminatis brevissime binervatis marginibus superne minute remote serrulatis, ramulinis elliptico-ovatis marginibus planis fortiter serratis, nervo unico ad medium percurrente, cellulis in foliis rameis angustis lævibus in ramulinis dorso ad folii apicem

papillis grossis sparsis dentiformibus alaribus vix conspicuis pellucidis.

Leptohymenium tenue, var., *Wils. in Sched.*

*Hab.* In Nepal orient. reg. temp., *J. D. Hooker* (No. 754).

Habitu *L. tenuis*, sed gracilior, foliis patentibus, nunquam patulo-recurvis tortisve, etiam diversiformibus.

107. S. PILOSULUS (*Mitten*). Dioicus, habitu *S. tenuis*, gracillimus, foliis orbiculari-ovatis concavis sæpe paululum asymmetricis in acumen piliforme attenuatis nervis binis brevibus margine superne serrulato, cellulis angustissimis elongatis alaribus inconspicuis, perichætialibus patentibus lanceolatis serrulatis, theca in pedunculo elongato ovali horizontali pendulave, operculo conico rostrato.

*Hab.* In Assam superiore, *Griffith*. In mont. Khasian., *J. D. Hooker et T. Thomson* (fragmentum).

Statura *S. glaucocarpi*, habitu autem, ramis dendroideo-fasciculatis, *S. tenuis*.

108. S. papillatus. (Hypnum, *Harvey, Hook. Icon. Plant. Rar.* t. 23. f. 8.)

*Hab.* In India orient., *Wallich*! Etiam in Borneo insula, *Motley*!

*Pedunculus* longissimus. *Theca* ovalis, curvata, horizontalis, operculo conico, peristomio interno dentium longitudine ciliis singulis æquilongis interpositis in membrana ad dentium medium fere exserta. *Folia* perichætialia interna longissima, attenuata, flexuosa.

** *Folia* brevi acuminata.

109. S. HIMALAYANUS (*Mitten*). *S. umbrato* similis, foliis latis subtriangulari-cordatis acutis profunde triplicatis nervo ut plurimum unico tenui ultra medium evanido margine argute serrata, cellulis elongatis angustis lævibus basi fuscis.

Hypnum umbratum, var., *Wils. in Sched.*

*Hab.* In Nepal, *Wallich*! In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1103).

*S. umbrato* statura similis, habitu autem, caule strictiore, ramis densioribus sensim longitudine decrescentibus et frondem filicinam formantibus et foliis brevioribus margine non recurvo, recedens.

110. S. macrocarpus. (Hypnum, *Hornsch.*—H. discriminatum, *Mont.*—H. paraphysale, *C. Müller, Bot. Zeit.* 1854, p. 572.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 949, 951, 952, 967, 1057, 1059, 1168, 1169). Kumaon, *Strachey et Winterbottom*! In Assam, *Griffith*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1033 *e*, 1053, 1054, 1058, 1089, 1093, 1094, 1095). In mont. Nilghiri, *Perrottet*! *Gardner*! *Gough*! *Schmid*! *G. Thomson* (No. 1176). In Ceylon, *Gardner*!

Species polymorpha, magnitudine valde varians. *Theca* nunc fere erecta, nunc pendula.

111. S. pseudostriatus. (Hypnum, *C. Müller*, *Bot. Zeit.* 1856, p. 458.)
*Hab.* In Nepal, *Herb. Kunze.*
E descriptione, forma *S. macrocarpi* videtur.

112. S. tenuis. (Neckera, *Hook.*—Leptohymenium, *Schw.*)
*Hab.* In Himalayæ reg. temp., Nepal, *Buchanan*! *Wallich*! *J. D. Hooker* (No. 958); Sikkim, *J. D. Hooker* (No. 908, 947, 948, 950, 953, 960, 974). In mont. Khasian. reg. temp. *J. D. Hooker et T. Thomson*! (No. 946, 959, 961).

113. S. HOOKERI (*Mitten*). Dioicus, caule procumbente, ramis frondiformibus pinnatis, foliis patenti-recurvis latissime ovatis acutis marginibus ad medium reflexis integerrimis deinde ad apicem incurvum aculeato-dentatis nervis binis brevibus, cellulis angustis lævibus alaribus externis majoribus hyalinis decurrentibus internis circiter binis rubris, perichætialibus erectis e basi latiuscula lanceolatis sensim tenuiter undulato-attenuatis subplicatis integerrimis, theca in pedunculo longiusculo recto rubro erecta subglobosa lævi, operculo conico-acuto, peristomio dentibus fuscis interno pallido processibus latiusculis solidis ciliis brevibus interpositis in membrana ad tertiam partem dentium longitudinis exserta.
Pilotrichum venustum, *Wils. in Sched.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 819, 820).
*S. venusto* (*Hypnum*, Reinw. et Nees; *Hookeria leptopoma*, Schw. t. 393) similis, sed omnibus partibus major, pulcher, fulvo-nitidus. *Theca* magna.

114. S. micans. (Hypnum, *Wils.*)
*Hab.* In Himalayæ orient. reg. temp., Sikkim, in Monte Tonglo, *J. D. Hooker*!
Specimina Indica Hibernicis paululum saturatius fusca, cæterum omnibus partibus conveniunt.

115. S. SERRULA (*Mitten*). Caule brevi ramoso laxe cæspitoso, foliis caulinis patentibus ovatis acuminatis caviusculis brevissime binerviis nitidis marginibus e basi ad apicem pulchre argute serratis, rameis paululum angustioribus enerviis eodem modo serratis, cellulis elongatis pellucidis nitidis.
*Hab.* In Himalaya temperata, Sikkim, in cacumine montis Tonglo, ad radices filicum, fragmenta, *J. D. Hooker*; et Kumaon, ad Dwali, alt. 8500 ped., *Strachey et Winterbottom*!
Species pulchella, quametsi sterilis, foliis margine ubique argute serrato, *Fabronias* in memoriam redigens, cum nulla alia Indica commutanda. Statura *S. subsimplicis* (*Hypnum*, auct.); habitus potius *S. macrocarpi*. *Color* pallide viridis micans, ætate pallide fuscus.

116. S. LYCHNITES (*Mitten*). Dioicus, caule laxe intertexto cæspitoso inordinatim pinnato, foliis patulis heteromallis e basi ovata sensim in

acumen longum lanceolatum flexuosum tortile attenuatis margine serrulatis nervis binis brevissimis, cellulis angustis elongatis alaribus vix conspicuis, perichætialibus conformibus subintegerrimis, theca in pedunculo longiusculo ovali subcernua, operculo conico-acuto, peristomio normali.

*Hab.* In mont. Nilghiri, *Gough*! In mont. Khasian., *J. D. Hooker et T. Thomson*, fragmenta. In Ceylon, *Gardner* (No. 1025, 1052, 1119).

*Hypno mollusco* statura colore et adspectu similis, sed foliis vix unquam secundis basi minus dilatatis argutius serrulatis, cellulis ubique homomorphis recedens.

117. S. polymorphus. (Hypnum, *Hook. et Tayl.*)

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson*! (No. 1030).

118. S. LACERULUS (*Mitten*). Monoicus, pusillus, flavus, caule gracillimo vage ramoso, foliis laxis squarrosis e basi rotundato-ovato in acumen longe lanceolatum sensim angustatis nervis binis brevissimis marginibus ubique serrulatis folii medium versus incurvis, cellulis elongatis alaribus nullis, perichætiis magnis foliis erectis internis elongatis latiusculis superne in lacinias angustas laceris, pedunculo elongato.

*Hab.* In India orient., *Wallich*!

*S. Sommerfeltii* (*Hypnum*, Myrin), formis minoribus similis, sed foliis serrulatis et perichætialibus laceris.

119. S. glaucocarpus. (Hypnum, *Reinwdt.*, *Schw.* t. 228.—H. retroflexum, *Harvey*, *Hook. Icon. Plant. Rar.* t. 23. f. 6.)

*Hab.* In India orient., *Wallich*! In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 1085).

### 6. CHÆTOMITRIUM, *Dozy et Molk. Musc. Archip. Ind.* p. 117.

1. C. VOLUTUM (*Mitten*). Caule repente, ramis confertis curvatis compressiusculis, foliis rameis patentibus ambitu ellipticis concavis apicem versus contractis deinde in apicem planiusculum subovatum margine flexo recurvove productis brevissime binervatis marginibus serrulatis dorso papillosis, cellulis elongatis angustis subobscuris alaribus paucissimis hyalinis, perichætialibus brevibus in apiculum longiorem angustiorem attenuatis, theca in pedunculo breviusculo lævi ovali inclinata.

*Hab.* In Ceylon, ramulos arborum circumvolvens, *Thwaites*!

*C. elongato* simillimum, sed pedunculo lævi et foliis paululum angustioribus.

### 7. PHYLLOGONIUM, *Brid.*

1. P. elegans, *Hook. et Wils.*

*Hab.* In Ceylon insula, *Gardner*!

Nisi foliis perichætialibus parum minus dentato-laceris, cum planta Novæ Zelandiæ omnibus partibus convenit.

### 8. Sauloma, *Hook. fil. et Wils. in Fl. Nov. Zeland.*

1. S. microcarpa (Pterogonium, *Harvey, Hook. Icon. Plant. Rar.* t. 24. f. 12.)

*Hab.* In Nepal, *Wallich*! In Ceylon, *Gardner* (No. 1032, 1033) *et Thwaites*!

### 9. Lepidopilum, *Brid.*

1. L. purpuratum (*Mitten*). Monoicum, caule cæspitoso procumbente parce vage ramoso, foliis compressis patentibus ovalibus asymmetricis acutis margine superne serrulatis nervis binis purpureis paulo ultra medium evanidis, cellulis oblongis crassiuscule limitatis, perichætialibus ovatis longe acuminatis serrulatis, theca in pedunculo elongato ovali horizontali collo crassiusculo ætate pendula, operculo conico brevi-rostrato, peristomio dentibus rubris interno processibus luteis brevioribus in membrana ad $\frac{1}{4}$ dentium longitudinis exserta.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 707).

*L. Uticamundianum* simillimum, florescentia autem monoica.

2. L. secundum (*Mitten*). Monoicum, caule procumbente ramoso, foliis compressis patentibus elongato-ovatis acutis symmetricis margine superne serrato nervis binis concoloribus ad medium evanidis, cellulis elongatis laxis longitudine latitudinem quadruplo superantibus basi parum latioribus, perichætialibus parvis lanceolatis, theca in pedunculo elongato gracili anguste ovali pendula.

Hookeria secunda, *Griff. Not.* p. 477; *Icon. Plant. Asiat.* ii. t. 99. f. 2.

*Hab.* In mont. Khasian., in ripis Mumbree, *Griffith*!

*L. purpurato* et *L. Thwaitesiano* simile, sed paululum minus et structura foliorum certe diversum.

3. L. Thwaitesianum (*Mitten*). Monoicum, caule procumbente ramoso, foliis compressis ovato-lanceolatis asymmetricis acutis margine superne serratis nervis binis concoloribus paulo ultra medium evanidis, cellulis angustissimis longitudine latitudinem octies superantibus, perichætialibus ovatis longe acuminatis, theca in pedunculo elongato inclinata subhorizontali ovali collo crassiusculo, operculo conico brevirostrato, peristomio dentibus rubris interno processibus angustis æquilongis in membrana ad $\frac{1}{3}$ dentium longitudinis exserta.

*Hab.* In Ceylon insula, *Thwaites*!

*L. secundo* simillimum, sed foliis e cellulis multo angustioribus areolatis statim distinguitur.

4. L. uticamundianum, *Mont.*

*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid.*

### 10. Hookeria, *Sm.*

1. H. acutifolia, *Hook.* (H. Grevilleana, *Griff. Not.* p. 473; *Icon. Plant. Asiat.* t. 2. f. 4.)

*Hab.* In Nepal, *Wallich*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! In rupibus madidis ad Sururem et Mumbree, *Griffith*!

## § XI. Neckeraceæ.

Orthotheciaceæ ex parte, Hypnaceæ ex parte, Leptodontaceæ et Neckeraceæ, *Schimp. Coroll.*

*Folia* compressa ut plurimum oblique inserta, apice lata, cellulis firmis, superioribus rotundatis ovoideisve, inferioribus longioribus. *Rami* pinnati, planati, frondiformes dendroideive. *Theca* erecta vel horizontalis, sæpe brevi-pedunculata et immersa. *Peristomium* Hypnacearum. *Calyptra* dimidiata, interdum parva mitriformis.

### 1. Stereophyllum.

Pleurocarpicum. *Folia* uninervia, cellulis rotundatis firmis. *Caulis* prostratus, vage ramosus, radicans.

1. S. Indicum (Pterygophyllum Indicum, *Belanger, Voy.* t. 9. f. 2.—Hookeria obtusifolia, *Harvey, Hook. Icon. Plant. Rar.* t. 24. f. 11.)

*Hab.* In Carnate, *Belanger*. Ad Silhet, *Wallich*!

### 2. Neckera, *Hedw.*

Omalia, *Brid.*; Leptodon, *Brid.*; Climacium, *Mohr*; Thamnium, *Schimp.*

Inter genera supra memorata, quæ pro sectionibus generis unici ægre sustinenda sunt, *Climacium* primo intuitu distinctissimum videtur, sed præter thecarum formam rectam a *Thamnio* nullo alio charactere distinguitur; nam peristomii evolutio minor ejusdem typi est ut in *Bryis*, in *Hypnis* et in *Leskeis* invenitur, et thecæ forma erecta pro distinctione generica, quum inter genera adeo naturalia ut ea separare non possumus, ut in *Dicranis*, in *Fissidentibus* et in *Leskeis*, et interdum in eadem specie, thecas rectas vel inæquales videamus, non recipienda est. *Omalia* etiam, si species Europæas tantum observaveris, satis diversa est, inter species Indicas autem in *Neckeras leiophyllas*, et hæ in *Neckeras rhystophyllas*, quæ in *N. thamnias* sensim transeunt.

* *Omalia*, Brid.

1. N. Targioniana (Omalia, *Gough, MSS.*). Dioica, caule repente, ramis brevibus subpinnatim ramosis, foliis subnitidis arcte adpressis complanatis obovatis dorsalibus ventralibusque symmetricis lateralibus paululum asymmetricis basi curvatis et basin versus margine inflexo sæpe in lobulum semiovatum dilatato subindistincte brevissime binervatis integerrimis, cellulis basi media elongatis subellipticis lateralibus superioribusque parvis rotundatis, perichætialibus erectis e basi ovata angustatis ligulatis, theca in pedunculo breviusculo ovali parva subinclinata, calyptra leviter plicata vaginulaque pilosa.

*Hab.* In mont. Nilghiri, *Gough*!

*N. trichomanoidi* magnitudine similis, sed ramis e caule repente radiculoso subuncialibus parce ramulosis. *Folia* lævia, non lucide nitentia; lateralia lobulis eorum generis Hepaticarum *Radulæ* instar.

2. N. spathulæfolia. (Hypnum, *C. Müller, Synops.* ii. p. 231.)
*Hab.* In India orientali (*Hb. Sentner*).

3. N. OBTUSATA (*Mitten*). *N. trichomanoidi* omnibus partibus conveniente, sed foliis apice rotundatis minutissime parceque crenulatis, apiculo nullo.
*Hab.* In Tibet. occid. reg. temp., *T. Thomson*!
Specimina pauca vix analysi sufficiunt; quamvis *N. trichomanoidi* adeo affinis, defectu apiculorum folii apicis facile distinguitur.

4. N. Javanica, *C. Müller*.
*Hab.* In Ceylon, *Gardner*!

5. N. flabellata. (Hookeria, *Smith in Trans. Linn. Soc.* ix. p. 280, t. 23. f. 2.—N. Javanica, ex parte, *Wils. in Sched.*)
*Hab.* In mont. Nilghiri, *McIvor*! In Ceylon, *Gardner* (No. 720) *et Thwaites*!
*N. Javanicæ* simillima, foliis autem ambitu magis obovatis, cellulis omnibus brevioribus apicem versus rotundatis. Perichætio, theca et peristomio haud recedere videtur.

6. N. HOOKERIANA (*Mitten*). Dioica, habitu *N. Javanicæ*, sed major, ramis elongatis ramulis inordinatis pinnatis bipinnatisque, foliis arcte complanatis divaricatis oblongo-ligulatis obtusis asymmetricis nervo paulo ultra medium evanido apice grossiuscule dentatis cæterum integerrimis margine latere inferiore basin versus anguste incurvo, cellulis inferioribus elongatis angustis alaribus nullis superioribus et apicem versus ovalibus, perichætialibus e basi brevi ovata erecta convoluta lanceolato-subulatis squarrosis apice paucidentatis nervo ultra medium evanido, theca in pedunculo æquilongo brevi ovali, operculo conico acuminato, peristomio dentibus teneris angustis processibus angustis pertusis sessilibus quam dentes triente brevioribus.
N. Javanica, ex parte, *Wils. in Sched.*.
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 709, 712, 713, 714).—In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 723, 726).
Speciosa, subnitida, viridis, ætate fusca. *Rami* palmares altioresque, latitudine cum foliis trilineares. A *N. Javanica* statura majore, ramis minus decompositis et foliorum structura diversa.

7. N. Montagneana, *C. Müller, Bot. Zeit.* 1856, p. 436.
*Hab.* In mont. Nilghiri, *Perrottet*!

8. N. STRACHEYANA (*Mitten*). Foliis ovali-ligulatis curvatis apice obtusis serratis nervo sub apicem evanido, cellulis inferioribus elon-

gatis angustis superioribus apice rotundatis, perichætiis thecisque iis *N. Montagnei* similibus.

*Hab.* In Kumaon, *Strachey et Winterbottom.*

*N. Hookerianæ* simillima, sed foliis magis ovalibus, apicem minus obtusum versus angustioribus apice non exciso-dentatis sed serratis.

9. N. RECTIFOLIA (*Mitten*). Habitu *N. Javanicæ*, foliis minus arcte compressis patulo-divergentibus haud curvatis ligulatis suboblongis obtusis apiculatis apice dentatis et minute serrulatis nervo sub apice evanido, cellulis inferioribus elongatis superioribus rotundatis.

N. Javanica, ex parte, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 722).

*Folia* stricta, non arcuata, nervo elongato, margine apicem versus dentibusque minute serrulatis. *N. flabellatæ* affinis; sed folia non ovalia obovatave et non adeo compressa.

10. N. dentata, *Griff. Not.* p. 463; *Icon. Plant. Asiat.* t. 88. f. 2.

*Hab.* In Assam, *Griffith!*

Species *N. Javanicæ* simillima videtur.

11. N. LIGULÆFOLIA (*Mitten*). *N. Javanicæ* similis, foliis caulinis ligulatis paululum arcuatis acutatis serratis nervo sub apice evanido, rameis elliptico-lanceolatis acuminatis apicem versus serratis nervo ad medium evanido, cellulis basi elongatis angustis apice ovalibus, perichætialibus longe lanceolatis integerrimis.

"N. Javanica, var.; if not that, N. spectabilis, *Wils.* may be a state of N. Javanica," *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner* (No. 716, 717, 718).

A *N. Javanica* et *N. scalpellifolia*, foliis angustioribus nervo longiore differt. Habitu, in speciminibus efructiferis, ramulis attenuatis, foliis angustis, ab affinibus paululum recedit.

12. N. SCALPELLIFOLIA (*Mitten*). Foliis ambitu ovalibus curvatis subscalpelliformibus obtusis apice dentatis arcuatis, cellulis inferioribus elongatis apice rotundatis, nervo intensius colorato paulo ultra medium evanido, perichætialibus intimis apice dentatis.

*Hab.* In Ceylon, *Gardner*. Etiam e Java accepi sub nom. *N. Javanicæ*.

Species, quamvis *N. Javanicæ* simillima, foliis apicem versus angustioribus, margine superiore valde arcuato, nervo longiore, cellulis alaribus inconspicuis, et foliis perichætialibus apice dentatis diversa.

13. N. GLOSSOPHYLLA (*Mitten*). Habitu *N. flabellatæ*, foliis divergentibus appresso-complanatis obovatis apice rotundatis obtusissimis minute serrulatis nervo tenui ultra medium evanido, cellulis minutissimis oblongis.

Omalia pulchella, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 710).
In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 730).

A *N. flabellata*, quacum magnitudine proxime convenit, foliis linguæformibus apice dilatatis obtusissimis minutissimeque serrulatis statim dignoscitur. *Color* pallide viridis, vix nitidus.

Adest in 'Flora Nov. Zelandiæ' species longe diversa quædam, jam sub nomine *Omaliæ pulchellæ* militans, etiam a cl. Wilson imposito, qui prolis suæ sibi oblitus est.

14. N. GOUGHIANA (*Mitten*). Dioica, ramis complanatis pinnatis, foliis patentibus elongate ovatis acutis lævibus margine inferne uno latere incurvis superne remote serrulatis, nervo brevi subdisperso, cellulis basi angustis elongatis apicem versus brevioribus longitudine latitudinem triplo superantibus ellipticis, foliis ramulinis brevibus ovatis acutatis margine superne arctius serrulatis.

*Hab.* In mont. Nilghiri, *Gough*!

*N. complanatæ* formis minoribus maxime similis, sed foliis caulinis angustioribus argutius minute serrulatis, rameisque non acuminatis. Plantam masculam tantum vidi.

### ** *Leptodon*, Brid.

15. N. flexuosa, *Harvey*, *Hook. Icon. Plant. Rar.* t. 21. f. 3.

*Hab.* In Nepal, *Wallich*! In Himalayæ boreali-occident. reg. temp., *Strange*! *et T. Thomson*! (No. 943, 944). Ad Calcutta, *Hb. Schimper*.

16. N. Pluvini. (Pilotrichum, *Brid.* ii. p. 260.)

*Hab.* In India orient., *De Pluvin.*

17. N. RIGIDULA (*Mitten*). Dioica, caule repente, ramis elongatis pinnatis frondiformibus siccitate vix curvatis, foliis compressis patentibus ovatis obtusis superne subplicatis undulatisque nervo ad $\frac{3}{4}$ evanido marginibus recurvis, cellulis basi ad nervum elongatis reliquis rotundatis, perichætialibus ovatis acuminatis convolutis.

Neckera rigidula, *Wils. in Sched.*

*Hab.* In Himalayæ occid. reg. temp., Kashmir, *T. Thomson*! (No. 825).

*N. flexuosa* robustior, rigidior, ramis strictis. Habitu *Rhystophyllorum*, sed colore opaco et adspectu *Leptodontis*.

### *** *Rhystophyllum*, Ehrh.

18. N. æqualifolia, *C. Müller*, *Bot. Zeit.* 1854, p. 567.

*Hab.* In mont. Nilghiri, *Foulkes*! *Schmid.*

*Theca* in pedunculo brevissimo, ovalis, immersa, peristomio dentibus pallidis angustis, interno processibus angustis brevioribus sessilibus.

19. N. exserta, *Hook.* (N. elegantula, *Griff. Not.* p. 464; *Icon. Plant. Asiat.* ii. t. 83. f. 5?)

*Hab.* In Himalayæ reg. trop., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 945).

20. N. CRINITA (*Griff. Not.* p. 464; *Icon. Plant. Asiat.* ii. t. 84. f. 1). Monoica, caule repente, ramis vage subpinnatim ramosis, foliis compressis patenti-divergentibus ovali-ligulatis obtusissimis pluries trans-

verse undulatis margine inferiore incurvis integerrimis nervo infra medium evanido, cellulis basi elongatis superne minutis ovalibus rotundisque, perichætialibus externis patulis ovatis longiuscule acuminatis obtusis ad thecæ dimidium attingentibus internis erectis angustis setiformibus apice erosis ad apicem operculi productis, theca in pedunculo brevissimo ovali, operculo conico rostrato, calyptra parva pilosa.

*Hab.* In Ceylon, *Thwaites*! In Assam, *Griffith*!

*N. exsertæ* similis, perichætiis autem *N. undulatæ*, sed minoribus vix folia caulina superantibus.

21. N. ACUTATA (*Mitten*). Habitu *N. exsertæ*, foliis laxe compressis e basi ovata angustatis ligulatis asymmetricis parum longitudinaliter undulatis nervo sub apicem acutatum evanido marginibus fere ubique minute crenulato-serrulatis, cellulis basi elongatis angustis cito in minutas rotundas diametro $\frac{1}{4000}$ unciæ metientes transeuntibus.

N. fimbriata, var.? *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp. *J. D. Hooker et T. Thomson*! (No. 912.)

22. N. RUGULOSA (*Mitten*). Habitu *N. undulatæ*, foliis laxe compressis patentibus e basi parum dilatata ovata sensim ligulatis obtusis apiculo brevi parce rugoso-undulatis sublævibus nervo sub apicem evanido margine inferiore uno latere incurvo ubique minutissime crenulato-serrulato, cellulis basi elongatis angustis in medio ovalibus apice rotundis et diametro $\frac{1}{3000}$ unciæ metientibus.

*Hab.* In Ceylon, *Thwaites*!

*N. acutata* major, foliis longioribus, cellulis majoribus; statura *N. undulatæ*, sed foliis non regulariter compressis ætate porphyriis.

23. N. HIMALAYANA (*Mitten*). Ramis frondiformi-pinnatis bipinnatisque, foliis compressis ovato-elongatis asymmetricis transverse parce undulatis apice obtusis brevi-acuminatis, nervo sub apice evanido, marginibus incurvis integerrimis apice tantum parcissime minute serrulatis, cellulis basi angustis elongatis medio elongatis longitudine latitudinem quadruplo superantibus apice subellipticis quam eæ medii dimidio brevioribus et diametro $\frac{1}{3000}$ unciæ metientibus.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*!

Habitu, colore staturaque *N. undulatæ*, sed foliis minus undulatis, apice minus obtusatis, marginibus incurvis, et cellulis omnibus longioribus.

24. N. flaccida, *C. Müller*.

*Hab.* In Ceylon insula, *Gardner*!

25. N. PARISHIANA (*Mitten*). *N. undulatæ* simillima, foliis paululum laxioribus compressis divergentibus ovatis longe ligulatis curvatis asymmetricis pluries transverse undulatis apice obtusis rotundatis mucronulo brevissimo, nervo sub apice evanido, marginibus ubique minutissime crenulato-serrulatis inferiore ad basin late auriculari modo

incurvo pulchre pluries undulato-plicato, cellulis basi angustis elongatis mediis apicalibusque ovalibus latitudine $\frac{1}{3000}$ unciæ metientibus.

*Hab.* Ad Moulmein, in sylvis humidis, *Rev. D. Parish*!

26. N. fimbriata, *Harvey, Hook. Icon. Plant. Rar.* t. 21. f. 4.

*Hab.* In mont. Khasian. reg. subtrop., *J. D. Hooker et T. Thomson* (No. 912, 988). In Himalayæ reg. trop., Nepal, *Wallich*! Sikkim, *J. D. Hooker*!

27. N. UROCLADA (*Mitten*). Dioica, cæspitosa, ramis brevibus dichotomis subpinnatisque in ramulos elongatos caudiformes diversa crassitudine productis, foliis subcompressis in ramulis elongatis subtereti-imbricatis patentibus ovatis ligulatis obtusis parce undulatis vel lævibus nervo crassiusculo sub apice evanido marginibus basi incurvis apice subcrenulatis, cellulis basi elongatis angustis apice ovoideis firmis, perichætialibus brevibus ovatis acuminatis apice obtusis, theca ovali erecta in pedunculo triplo longiore.

*Hab.* In Rangoon, *McClelland*!

Habitu cæspitoso, ramis variis conferte ramulosis a congeneribus recedit; habitu foliorum vix compressorum, *N. fimbriatæ* subsimilis, sed forma et cellulis diversa.

**** *Climacium*, Mohr.

28. N. FRUTICOSA (*Mitten*). Dioica, caule repente, ramis frondiformibus inferne nudiusculis stipitatis bipinnatis, foliis rameis patentibus ovali-oblongis gibbosis planiusculis apice acuto parce serratis nervo ad $\frac{3}{4}$ evanido, cellulis elongatis apice folii tantum rotundatis, ramulinis oblongis obtusioribus magis serratis, perichætialibus parvis vaginam vix tegentibus e basi ovata erecta acuminatis patulis, theca in pedunculo elongato rubro gracili-ovali erecta, peristomio dentibus subalbidis processibus tenuiter elongatis perforatis e membrana brevi ortis.

N. longirostris, var.? *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 711, 719).

*N.* (*Porotricho*) *longirostri* similis, sed rigidior, foliis minus complanato-appressis, ramulinis apice latioribus obtusiusculis et cellulis ad folii apicem subrotundatis diversa.

29. N. macrocarpa, *Brid., Schw.* t. 267.

*Hab.* In Nepal, *Wallich*.

30. N. subserrata, *Hook.* (N. breviseta, ex parte, *Wils. in Sched.*: "name proposed to replace *N. subserrata*, it not being a *Neckera* of any age or system," *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Simla, *T. Thomson* (No. 1012); Sikkim, *J. D. Hooker*! (No. 1013).

Species monoica, habitu *N. Alleghaniensis* (*Hypnum*, C. Müller, Synops. ii. p. 502).

31. N. ARCUANS (*Mitten*). Monoica, caule repente, ramis dendroideis stipitatis proliferis pinnatis uno latere curvatis, foliis patentibus elliptico-ovatis elongatis apice dentatis nervo crassiusculo sub apice evanido dorso dentato, cellulis oblongis pellucidis, perichætialibus parvis erectis ovato-lanceolatis, theca in pedunculo brevi crassiusculo erecta brevi-ovata, collo distincto, peristomio luteo.

N. breviseta, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 1013 *b*). In mont. Nilghiri, *Gardner*!

N. *Alleghaniensi* simillima, sed foliis basi angustioribus, nervo crassiore dorso dentato diversa. A *N. subserrata* cellulis foliorum duplo majoribus et ambitu foliorum ipsa magis angustata recedit.

32. N. crenulata, *Harvey, Hook. Icon. Plant. Rar.* t. 21. f. 6. (N. spectabilis, *Griff. Not.* p. 463; *Icon. Plant. Asiat.* ii. t. 88. f. 3.)

*Hab.* In Himalaya temperata, Nepal, *Wallich*! In Kumaon, *Strachey et Winterbottom*! In mont. Khasian., *Griffith*! *J. D. Hooker et T. Thomson*!

33. N. alopecuroides. (Hypnum, *Hook. Icon. Plant. Rar.* t. 24. f. 5.—N. efructifera, *Griff. Icon. Plant. Asiat.* ii. t. 87. f. 3, forsan hujus loci est.)

*Hab.* In Nepal, *Wallich*!

34. N. Schmidii. (Hypnum, *C. Müller, Bot. Zeit.* 1854, p. 574.)

*Hab.* In mont. Nilghiri, *Schmid.*

35. N. PARVULA (*Mitten*). Habitu *N. Alopecuri*, gracilis, humilis, pinnata bipinnatave, foliis laxe compressis patentibus late ovatis apice acutis acutatisve asymmetricis haud curvatis apicem versus serrulatis nervo crassiusculo lutescente sub apice evanido, cellulis omnibus minutis distinctis rotundis perichætialibus apicibus serrulatis.

*Hab.* In mont. Nilghiri, *M'Ivor*!

Species parva. *Caulis* uncialis—sesquiuncialis. *Folia* parva, pallide viridia, opaca.

## § XII. LEUCODONTACEÆ.

Leucodontaceæ et Hedwigiaceæ, *Schimp. Coroll.*

### 1. HEDWIGIA, *Ehrh.*

1. H. Indica. (Ancectangium, *Mont. in Sched.*—Neckera macropelma, *C. Müller, Synops.* ii. p. 104.)

*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid*! *M'Ivor*!

2. H. ATTENUATA (*Mitten*). Dioica? ramis attenuatis subpinnatis, foliis laxe patentibus ovali-ellipticis longe acuminatis, in ramulorum

apicibus piliformibus plicis circiter quinis obtusis exaratis, marginibus late planatis recurvisque, cellulis in folii medio ad basin flavis elongatis angustis ad angulos parvis rotundis superioribus subrotundis inter se subdistantibus texturam fuscam formantibus, perichætialibus longioribus angustioribus lanceolatis apicibus latiusculis acutis erectis, theca in pedunculo elongato aurantiaco ovali.

*Hab.* In Himalayæ occident. reg. temp., Kumaon, alt. 10,500 ped., *Strachey et Winterbottom*!

Habitu *H. secundæ*, sed foliis laxius dispositis in ramulis subpiliferis, et cellulis majoribus distincta.

3. H. imberbis, *Spruce*. (Anœctangium, *Hook. et Tayl. Musc. Brit.* p. 14, t. 6.)

*Hab.* In Ceylon, *Gardner* (No. 798).

4. H. ciliata, *Ehrh.*

*Hab.* In Nepal, *Wallich*!

## 2. Leucodon, *Schw.*

1. L. secundus. (Sclerodontium, *Harvey, Hook. Icon. Plant. Rar.* t. 21. f. 1.—S. strictum, *ejusd. l. c.* t. 21. f. 2.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 794); Kumaon, *T. Thomson* (No. 789, 790), *Royle*! et in Simla, *Jacquemont*! *T. Thomson*! (No. 788, 793, 795). In Tibet. occid. reg. temp., *T. Thomson* (No. 792).

Variat foliorum directione, ut in *L. sciuroide*.

2. L. sciuroides, *Schw.*

*Hab.* In Himalayæ occidentalis reg. temp., Kashmir, *T. Thomson* (No. 787 *c*), sterilis.

3. L. Thomsoni (*Mitten*). Monoicus, caule repente, ramis parce ramosis curvatis, foliis patentibus ovatis acuminatis concavis nervo vix ad medium percurrente marginibus late planatis, cellulis inferne minutis rotundatis superne elongatis, perichætiis inconspicuis foliis e basi convolutacea subulatis, theca emergente ovali, operculo conico brevi-curvirostrato, calyptra parva pilosa, peristomio dentibus subulatis rubris interno processibus angustis quam dentes dimidio brevioribus.

Lasia Indica, *Wils. in Sched.*

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson* (No. 791), in cæspite *L. secundi*.

Habitu staturaque *L. sciuroidis*, sed mollior. *Perichætia* brevia, vix conspicua. *Theca* parva. A *Lasia trichomitria* et *L. Californica*, quantum e speciminibus paucis elucet, ramis simplicibus non pinnatis et habitu fere exacto *L. sciuroidis*, discrepans.

### 3. Cryphæa, *Brid.*

#### * *Eucryphæa.*

1. C. sphærocarpa. (Neckera, *Hook. Trans. of Linn. Soc.* ix. p. 312, t. 27. f. 1.)

*Hab.* In Himalayæ reg. temp. Nepal, *Buchanan*! Sikkim, *J. D. Hooker* (No. 818).

2. C. Indica. (Pterogonium, *Mont. Syllog.* p. 21.)

*Hab.* In mont. Nilghiri, *Perrottet*! *Gough*! *Foulkes*! *et Schmid.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson*! fragmentum.

#### ** *Acrocryphæa*, Hook. et Wils.

3. C. concavifolia. (Schœnobryum julaceum, *Dozy et Molk. Musc. Archip. Ind.* t. 60.—Orthotrichum concavifolium, *Griff. Not.* p. 400; *Icon. Plant. Asiat.* ii. t. 76. f. 3.)

*Hab.* In Nepal, *Wallich*!

A *C. julacea* (*Grimmia*, Hornsch.), foliis perichætialibus interioribus minus subulato-aristatis, caulinis marginibus planis recurvulisve, et a *C. Gardneri* (species altera hucusque non descripta, a beato Gardner in Brasilia lecta et sub No. 75 evulgata, quamvis *C. julaceæ* valde similis, marginibus foliorum revolutis distinguenda) foliis marginibus planis vel paululum recurvis, recedit.

#### *** *Dendropogon*, Schimp.

4. C. ferruginea (*Mitten*). Ramis pendulis laxe pinnatim ramosis, foliis patentibus e basi ovali subulatis lanceolatis acutis, nervo fusco sub apice evanido, margine paululum recurvo, cellulis basi ad nervum elongatis angustis luteis ad angulos minutis transverse longiuscule ovoideis superioribus ovoideis omnibus minutis distinctis inter se subremotis.

*Hab.* In mont. Nilghiri, *Gough*!

A *C. rufescente*, habitu similis, foliis diversiformibus, et, structura quamvis similis, notis descriptis distincta.

### 4. Cleistostoma, *Brid.*

1. C. ambigua. (Pterogonium, *Hook. Trans. of Linn. Soc. Lond.* ix. p. 310, t. 26. f. 4.)

*Hab.* In Himalayæ reg. temp., Nepal, *Buchanan*! *Wallich*! Sikkim, *J. D. Hooker*? (No. 822, 823). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 821, 824).

## § XIII. LESKEACEÆ.

**Pseudo-Leskeaceæ et Leskeaceæ, *Schimp. Coroll.***

### 1. ANOMODON, *Hook.*

1. A. viticulosus, *Hook.* (A. obtusifolius, var.? *Wils. in Sched.*)
*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Simla, *T. Thomson*! (No. 1112, 1116).

2. A. INTEGERRIMUS (*Mitten*). Ramis compressis subpinnatis, foliis e basi ovata ligulatis obtusis marginibus integerrimis nervo sub apice evanido, cellulis minute papillosis diametro $\frac{1}{2000}$ unciæ metientibus.
A. obtusifolius, var., *Wils. in Sched.*
*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Simla, *T. Thomson* (No. 1172),
*A. viticuloso* minor, foliis compressis brevioribus latioribusque et cellulis majoribus. Ab *A. obtusifolio* foliis integerrimis discrepans.

3. A. PLANATUS (*Mitten*). Ramis compressis vage subpinnatis, foliis bifarie dispositis ovato-ligulatis obtusis asymmetricis marginibus non erosis nervo sub apice evanido, cellulis diametro $\frac{1}{3000}$ unciæ metientibus.
"*A. obtusifolius*, small barren state," *Wils. in Sched.*
*Hab.* In Himalayæ reg. temp., Simla, *T. Thomson* (No. 1126). Sikkim, in cacumine montis Tonglo, alt. 10,000 ped., ad radices filicum, *J. D. Hooker*!
*A. obtusifolio A. integerrimoque* similis, foliis tamen integerrimis a priore diversus; a secundo, foliis nervo uno lateri proximo asymmetricis, et magnitudine cellularum, distinctus.

4. A. tristis, *Cesati.* (A. fragilis, *Wils. in Lond. Journ. of Botany*, 1848, t. 10.—Leskea tristis, *Cesati in De Notaris, Syllab. Musc.* p. 67.)
*Hab.* In Himalayæ boreali-occident. (Kumaon), et Tibet. occid. reg. temp., *T. Thomson* (No. 1110). In Nepal, *Wallich*! Etiam in imperio Sinensi, *Alexander*!
Inter specimina Indica et Europæa Cesatiana discrimen nullum invenio.

5. A. ACUTIFOLIUS (*Mitten*). Ramis dendroideo-ramulosis proliferis, ramulis secundis decurvatis attenuatis, foliis ovatis acutis apicem versus serratis nervo ad $\frac{3}{4}$ evanido, cellulis pellucidis, perichætialibus vaginantibus e basi late oblonga subito breviter ligulatis, theca in pedunculo gracili purpureo cylindrica, operculo conico acuminato, peristomio *A. attenuati* processibus crenatis pellucidis.
A. attenuatus, var.? *Wils. in Sched.*
*Hab.* In Himalayæ occident. reg. temp., Kumaon, *Strachey et Winterbottom*! *et T. Thomson*! (No. 808).
Adspectu staturaque *A. attenuati*, foliis autem acutis, nullibi obscuris, et angustius serratis.

6. A. DEVOLUTUS (*Mitten*). Ramis pinnatim ramosis devolutis, foliis ovato-lanceolatis apice acuminatis acutis dentatis nervo sub summum apicem evanido.

*Hab.* In India montosa, fragmenta inter muscos varios, *J. D. Hooker*! *T. Thomson*! *Wallich*! *Gardner*! Etiam in Hong-Kong insula, *Bowring*!

Hujus speciei fragmenta tantum vidi. Statura coloreque plantæ, *A. viticuloso* similis. Habitus, ob ramos circinatos devolutos, singularis.

## 2. RHEGMATODON, *Brid.*

1. R. declinatus, *Brid.*

*Hab.* In Nepal, *Buchanan*!

2. R. polycarpus. (Anhymenium polycarpon, *Griff. Not.* p. 471; *Icon. Plant. Asiat.* ii. t. 97. f. 1.)

*Hab.* Assam, *Griffith*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 775).

*R. declinato R. orthostegioque* simillimus, foliis autem latioribus acuminatis. *Pedunculus* lævis.

3. R. orthostegius, *Mont.* (Anhymenium polysetum, *Griff. Not.* p. 472; *Icon. Plant. Asiat.* ii. t. 97. f. 2.)

*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid.* In Assam, *Griffith.*

Specimina authentica *Anhymenii polyseti* non vidi. Sub hoc nomine in Hb. Ward. *A. polycarpum* invenio; ex icone, a *R. orthostegio* non refugit. Ubi Griffith specimen suum legit, non indicatur.

## 3. TRACHYPUS, *Schw.*

*Folia* uninervia, cellulis abbreviatis rotundatis, calyptra dimidiata.

Neckera, ex parte, *C. Müller, Synops.* ii.; Pilotrichum, *auct. nonnull.*

1. T. bicolor, *Schw.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 842, 843, 844, 845). In mont. Nilghiri, *Gardner*! In Ceylon, *Gardner* (No. 846, 847).

2. T. procumbens. (Neckera, *C. Müller, Synops.* ii. p. 80.)

*Hab.* Bombay, *Kegel*! In Malabar, collibus Bababoodum, *Law*!

3. T. blandus. (Neckera, *Harvey, Hook. Icon. Plant. Rar.* t. 22.)

*Hab.* In Himalayæ reg. temp., Kumaon, *T. Thomson*! Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 838, 871, 873, 897, 908, 909, 924, 1073). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 782). In mont. Nilghiri, *Foulkes*! *Wight*! In Ceylon, *Gardner* (No. 911).

4. T. HARVEII (*Mitten*). Dioicus, caule repente, ramis elongatis flexuosis pendulis pinnatis lutescentibus, foliis patentibus laxis hastatis

basi cordatis auriculis latis circinatis rotundatis amplexantibus concavis plicatis superne sensim angustatis acumine semitorto nervo concolori ultra medium evanido carinatis margine serrulatis, cellulis angustissimis obscuris papillosis basi infima tantum pellucidis, perichætialibus lanceolatis apice serrulatis brevi-nervatis erectis, theca in pedunculo brevi scabro ovali erecta, operculo conico longi-curvirostrato, peristomio ciliis dentibus paululum brevioribus.

Pilotrichum attenuatum, P. fuscescens ex parte, et Neckera blanda, *Wils. in Sched.*

*Hab.* In Himalayæ reg. temp., Simla, *T. Thomson*! Nepal, *Wallich*! *J. D. Hooker*! Sikkim, *J. D. Hooker* (No. 840, 848, 871, 874, 905). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 895). In Ceylon, *Gardner* (No. 834).

*T. blando T. fuscescentique* statura intermedius et *T. nigrescenti* similis, sed foliis laxioribus auriculis latis; a *T. fuscescente*, cui torsione foliorum apiculi similis est, forma hastata non ovata, recedit.

5. T. fuscescens. (Neckera, *Hook. Musc. Exot.* t. 157; *Griff. Icon. Plant. Asiat.* ii. t. 87. f. 4.—Pilotrichum fuscescens *et* P. tortile, *Wils. in Sched.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 836, 877, 879, 880, 925). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 887 *b*, 888, 889, 891, 893, 904). In mont. Nilghiri, *Foulkes*! *G. Thomson* (No. 852 *c*). In Ceylon, *Gardner* (No. 835).

Crassitudine ramorum variabilis.

6. T. CUSPIDIFERUS (*Mitten*). *T. appresso* habitu staturaque similis, foliis concavis a basi auriculis rotundatis cordato-ovatis in apicem oblongo-lanceolatum subacutatum acuminatum productis nervo pallido sub apice evanido vix carinatis margine auricularum minute crenulato cæterum integerrimo sæpe pallidiore, cellulis basi pro spatio brevi pallidis iis nervo proximis elongatis angustis in auriculis ovoideis rotundatisque inter se remotioribus superioribus omnibus ovoideis minutis subobscuris luteo-viridibus lævibus.

Neckera cuspidifera, *Taylor, MSS.*!

*Hab.* In mont. Nilghiri, ad Ootacamund et Dodabet, *Schmid*! *Foulkes*! *Gardner* (*Hb. Greville*). In Ceylon, *Thwaites*!—Sterilis.

*T. pachypodibus* nonnullis australibus valde affinis, sed characteribus constantibus discrepans. A *T. cerino* (sub nomine *Neckera cerina*, Taylor, MSS., in Herb. Grevilleano asservato) forma foliorum supra medium magis contractorum et nunquam cellulis longioribus marginatorum, a *T. Hornschuchii*, alio loco descripto, cujus *Meteorium cuspidiferum* in 'Flora Novæ Zeelandiæ,' enumeratum, synonymon, est, forma etiam foliorum jam supra memorata statim dignoscitur, quamvis species primo adspectu persimillimæ sint.

7. T. ATRATUS (*Mitten*). **Dioicus, caule repente, ramis pendulis flexuosis longissimis ramulis brevibus remotiusculis curvulis pinnato, foliis erecto-patentibus ramulinis julaceo imbricatis e basi cordata undulata caulem amplexante oblongis obtusis subito in cuspidem tenuem elongatam productis cymbiformi-concavis nervo tenui vix ad medium attingente marginibus superne minutissime serrulatis, cellulis elongatis lævibus alaribus nullis.**

Hypnum auronitens, var., *Wils. in Sched.*

*Hab.* In mont. Nilghiri, *Gough*! ad Ootacamund, *Foulkes*! In Ceylon, *Gardner* (No. 815, 900).

*T. Buchanani* (*Leskea flexilis*, Hook. in Linn. Trans.) similis, sed species procerior videtur, ramis bipedalibus, foliis minus arcte imbricatis unicoloribus, cellulis angustioribus $\frac{1}{8000}$ unciæ latitudine et $\frac{5-7}{6000}$ longitudine metientibus, dum in *T. Buchanani* $\frac{1}{4000}$ latæ et $\frac{3-5}{4000}$ longæ inveniuntur.

8. T. Buchanani. (Neckera, *C. Müller, Synops.* ii. p. 669.—Leskea flexilis, *Hook. in Linn. Trans.* ix. p. 319, t. 28. f. 2.)

*Hab.* In Nepal, *Buchanan*! In Himalaya boreali-occident., *Royle*! In mont. Nilghiri, *Perrottet*!

9. T. plicæfolius. (Neckera, *C. Müller, Bot. Zeit.* 1854, p. 569.)

*Hab.* In mont. Nilghiri, *Schmid.*

10. T. brevirameus. (Neckera, *C. Müller, Bot. Zeit.* 1854, p. 570.)

*Hab.* In mont. Nilghiri, *Schmid.*

11. T. DECLINATUS (*Mitten*). **Viridis, foliis ovatis basi non auriculatis sensim lanceolatis nervo sub apice evanido longitudinaliter plicatis crispatulis margine a basi ad apicem serrulatis, cellulis ad angulos pluribus parvis laxioribus superioribus angustis papillosis obscuris.**

Hypnum declinatum, *Wils. in Sched.*

*Hab.* In Nepal, *Wallich*! In Himalayæ boreali-occident. reg. temp., *T. Thomson*! (No. 1014, 1015).

*T. crispatulo* valde affinis, sed ramis paululum densius pinnatis, foliis viridioribus basi non dilatatis, et cellulis ad angulos laxioribus diversus.

12. T. crispatulus. (Neckera, *Hook.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Gardner*! *Wallich*! Sikkim, *J. D. Hooker* (No. 849, 885). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 858, 859, 860, 870, 886). In Ceylon, *Gardner* (No. 861). Forma gracilior: Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 853, 867, 875).

13. T. AURICULATUS. *T. crispatulo* simillimus, foliis e basi auriculis angustis circinatis sensim lanceolato-angustatis longitudinaliter plicatis strictis crispatulisve, perichætio et theca *T. crispatuli*, peristomio interno ciliis quam dentes $\frac{1}{3}$ brevioribus.

Pilotrichum auriculatum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 863, 864, 880).

A *T. crispatulo*, foliis auriculis circinatis et a basi sensim angustatis, haud a basi ovali, cellulis brevioribus, certe recedit.

## 4. Leskea, *Hedw.*

Pleurocarpica. *Folia* uninervia, cellulis rotundatis ut plurimum papillosis intense viridibus. *Caulis* repens, assurgens, arcuatus, iterum radicans, inde prolifer, pinnatus, sæpe foliolis vestitus.

Leskea, *Hedw. et auct.*; Leskea, Pseudoleskea et Thuidium, *Bryol. Europ.*; Thelia, *Sullivant.*

### * *Homophyllæ.*

*Folia* caulina et ramulina fere homomorpha.

1. L. lævifolia (*Mitten*). Habitu *L. catenulatæ*, foliis ovatis acuminatis concavis margine plano recurvoque nervo crasso ad $\frac{3}{4}$ evanido, cellulis parvis rotundatis subovoidiisque distinctis lævibus.

*Hab.* In Himalayæ occidentalis reg. temp., Jamu, *T. Thomson*! (No. 1127, 1165).

*L. catenulatæ* et *L. incurvatæ* statura, colore habituque affinis, foliis tamen pellucidioribus, cellulis in folio medio ovoideis.

2. L. pellucinervis (*Mitten*). Ramis pinnatis compressis, foliis ovatis longe acuminatis planis nervo pellucido sub apice hyalino evanido, cellulis densissime papillosis obscuris.

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson* (No. 1125, 1132, 1146).

*L. rostratæ* valde affinis, sed, ut videtur, diversa.

3. L. capillata (*Mitten*). Monoica, caule decumbente pinnato, foliis patentibus e basi cordata lanceolato-acuminatis longe capillaceis obtusissime bicarinatis nervo percurrente marginibus minute serrulatis basi planiusculis, cellulis pellucidis basi rotundatis apicem versus elongatis dorso minute papillosis, perichætialibus erectis lanceolatis tenuiter acuminatis integerrimis lævibus, theca in pedunculo longo gracili rubro cylindrica arcuata, operculo conico, peristomio dentibus luteis processibus angustis ciliis tribus subappendiculatis interpositis in membrana ad dentium dimidium producta.

Hypnum microphyllum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 1073, 1123).

*L. microphyllæ*, Swartz, maxime affinis, foliis autem acumine angusto longissimo. Statura, *L. muricolæ* (*Hypnum*, C. Müller) similis.

4. L. obscuriuscula (*Mitten*). Monoica, caule prostrato pinnato, foliis patentibus orbiculato-ovatis concavis biplicatis brevi-acuminatis

nervo in acumen subulatum excurrente margine serrulatis, cellulis ubique papillosis rotundis ovoideisve obscuriusculis, perichætialibus erectis late lanceolatis nervo in acumen longum excurrente integerrimis, theca in pedunculo elongato ovali-cylindrica paululum curvata horizontali, operculo convexo.

*Hab.* In Assam superiore, *Griffith*!

*L. capillatæ* similis, sed foliis basi magis orbiculatis, cellulis non in parte superiore elongatis sed brevibus ovoideis rotundisve papillis obtectis.

5. L. SUBULACEA (*Mitten*). Monoica, caule repente foliolis nudo, ramis simplicibus, foliis e basi latissime ovata concava longe subulato-attenuatis falcatis recurvis nervo excurrente læviusculo marginibus serrulatis basi recurvis, cellulis distinctis papillosis, rameis patulis compressis ovatis acuminatis nervo concolori percurrente marginibus minute serrulatis cellulis subdistinctis papillosis, perichætialibus elongatis erectis lanceolatis tenuiter angustatis nervo percurrente.

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*!

*L. scopulæ* simillima, sed foliis e basi brevi longe subulatis falcatis, marginibus serrulatis et dorso papillosis, diversa.

6. L. SCOPULA (*Mitten*). Monoica, caule repente pinnato foliolis brevissimis subnudo, ramis brevibus simplicibus, foliis patentibus laxis ovato-lanceolatis a basi sensim angustatis nervo luteo percurrente marginibus inferne serrulatis superne subintegerrimis, cellulis oblongis elongatisque longitudine latitudinem triplo excedente distinctis brevi-papillosis pellucidis, rameis conformibus, perichætialibus elongatis erectis tenui-membranaceis parce plicatis ovali-lanceolatis superne parce serrulatis, nervo in apiculum piliformem elongatum sensim attenuato.

*Hab.* In Himalaya occident., Kumaon, *Strachey et Winterbottom.*

*L. capillatæ* et *muricolæ* similis, sed foliis tenuius membranaceis cellulisque elongatis diversa.

7. L. consanguinea. (Pterogonium, *Mont.*)

*Hab.* In mont. Nilghiri, *Perrottet*!

8. L. STRATOSA (*Mitten*). Monoica, caule longe repente ramis simplicibus pinnato parce radiculoso foliolis parvis subnudo, foliis patentibus e basi orbiculari-ovata subulato-lanceolatis biplicatis nervo crassiusculo in apice evanido margine integerrimis, cellulis lævibus distinctis areolatis, rameis ovatis acuminatis sub-biplicatis integerrimis, cellulis distinctis lævibus nervo sub apice evanido, perichætialibus erectis longissimis lanceolatis tenuiter angustatis nervo percurrente, theca in pedunculo elongato cylindrica paululum curvata, peristomio interno processibus externum longitudine æquantibus in membrana ad tertiam dentium longitudinis partem exserta ciliis nullis.

*Hab.* In Assam superiore, ad Suddya, *Griffith*!

Statura *L. remotifoliæ* similis, sed ramis simplicibus longe diversa.

9. L. prionophylla. (Hypnum, *C. Müller, Synops.* ii. p. 481.—H. nervosum, *Hook. Icon. Plant. Rar.* t. 24. f. 3.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 1102). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1121). In mont. Nilghiri, *Gardner*!

Obscure viridis, ætate sublutescens. *Folia* a basi latiuscula sensim ad apicem angustata, nervo pellucido percurrente, marginibus ubique serrulatis, cellulis minutis obscuris papillosis. *Theca* peristomio interno *Leskeæ*.

10. L. RAMULIGERA (*Mitten*). Monoica, caule arcuato procumbente foliolis parce obtecto ramis pinnatim ramulosis subinordinatim ramoso, foliis patentibus hastato-ovatis sensim acuminatis sub-biplicatis nervo percurrente marginibus superne subserrulatis, cellulis subdistinctis brevissime papillosis sublævibus, rameis ovatis acutis nervo concolori margine minute serrulatis, perichætialibus elongatis erectis tenui-membranaceis ovato-lanceolatis superne parce serrulatis nervo in acumen subulatum integerrimum excurrente.

*Hab.* In Nepal, *Wallich*! In Kumaon, *Strachey et Winterbottom*!

Habitu inter species ramis simplicibus et pinnatis quasi intermedia, sed quoad foliorum structuram et formam omnino priori sectioni adscribenda, *L. capillatæ* et affinibus simillima. Specimina Wallichiana pedunculum juvenilem calyptra pallida longiuscula terminatum e perichætio paululum exsertum ostendunt.

11. L. Wallichii. (Hypnum, *Hook.*)

*Hab.* In Himalaya temperata, Nepal, *Wallich*! *J. D. Hooker*! (No. 1017). Kumaon, *Strachey et Winterbottom*!

12. L. HOOKERI (*Mitten*). Caule elongato rubro procumbente erectove simplici rarius diviso compresso foliolis brevibus vestito, ramis approximatis attenuatis patulis divaricatis recurvis undique a caule orientibus, foliis caulinis a basi brevi reniformi-hastata pluries plicata in acumen lanceolatum recurvum angustatis nervo sub apice evanido marginibus fere ad apicem recurvis subintegerrimis apice parce serrulatis, cellulis elongatis angustis lævibus basi croceis, rameis e basi orbiculari-ovata pluries plicata concava in acumen lanceolatum æquilongum attenuatis nervo carinatis margine serratis cellulis elongatis lævibus.

Hypnum scoparium, *Wils in Sched.*

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*, Sikkim, *J. D. Hooker* (No. 1104, 1105).

Species habitu peculiari, ramis copiosis attenuatis æquilongis, *Sphagna* simulans et *Leskearum* decus.

### ** *Heterophyllæ.*

***Folia* caulina a ramulinis diversiformia.**

13. L. cymbifolia. (Hypnum, *Dozy et Molk.*, *C. Müller*, *Synops.* ii. p. 485. —H. tamariscinum *et* H. prorepens, *Wils. in Sched.*

*Hab.* In Himalayæ totius reg. temp., Sikkim, *J. D. Hooker*! Nepal, *Wallich*! *Buchanan*! *J. D. Hooker*! Simla, *T. Thomson*! (No. 1109, 1111, 1171, 1174). Kashmir, *T. Thomson*! Kumaon, *Strachey et Winterbottom*. In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 1107, 1117, 1118); *Griffith*! In mont. Nilghiri, *Gardner*!

14. L. blepharophylla. (Hypnum, *C. Müller*, *Bot. Zeit.* 1854, p. 573.)

*Hab.* In mont. Nilghiri, *Schmid.*

15. L. pristocalyx. (Hypnum, *C. Müller*, *Bot. Zeit.* 1854, p. 573.)

*Hab.* In mont. Nilghiri, *Schmid.*

16. L. TRACHYPODA (*Mitten*). Monoica, dense cæspitosa, caule gracili dense vestito, foliis remotis e basi hastata caule angustiore acuminatis lanceolatis nervo crasso concolori in apice evanido margine recurvo integerrimo, cellulis subpellucidis, rameis patulis incurvis laxe imbricatis ovatis obtusis concavis nervo hyalino marginibus dorsoque papillis erosis obscuris, perichætialibus erectis ovalibus superne serratis nervo in acumen longum subintegerrimum sensim angustatum excurrente, theca in pedunculo elongato papillis densis scaberrimo horizontali ovali æquali, peristomio interno externum æquante ciliis singulis inter processus in membrana ad dentium dimidium protracta.

*Hab.* In Nepal, *Wallich*!

A speciebus similibus Indicis pedunculi scabritie facile nota. A *L. plumulosa* (*Hypnum*, Dozy et Molk.), florescentia monoica et peristomio interno diversa.

17. L. ASSIMILIS (*Mitten*). Habitu, colore et statura, *L. delicatulæ* similis, caule foliolis vestito, foliis caulinis e basi latissime ovata in apiculum apici filiformi æquilongum attenuatis margine recurvis apice serrulatis nervo sub apice evanido, cellulis ovalibus breviter papillosis distinctis, rameis ramulinisque orbiculari-ovatis valde concavis acutis serrulatis nervo sub apice evanido concolori cellulis rotundis breviter papillosis distinctis.

*Hab.* In Himalayæ occid. reg. temp., Kumaon, *Strachey et Winterbottom*!

*L. delicatulæ* (*Hypnum recognitum* auct. nonnullorum) quamvis primo visu omnino similis, oculo armato tamen certe diversa, foliis dorso papillis brevibus nec spinulosis et cellulis brevioribus.

18. L. GLAUCINA (*Mitten*). Dioica, caule (habitu *L. tamariscinæ*) parce villoso, foliis caulinis erecto-patentibus subcomplicatis late ovatis subcordatis acutis nervo ultra $\frac{3}{4}$ evanido marginibus ubique minute crenulatis, cellulis subpellucidis ubique papillosis, rameis ramulinisque

concavis obtusioribus breviter nervatis marginibus dorsoque papillis asperis, perichætialibus erectis lanceolatis loriformi-attenuatis serrulatis inferne parce lacero-ciliatis, theca in pedunculo longiusculo rubro ovali-cylindrica parum curvata suberecta, operculo conico rostrato.

Hypnum tamariscinum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1173 *b*). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! In Assam, *Griffith*! In Ceylon, *Maxwell*! *et Thwaites*! Etiam in Java.

*L. cymbifoliæ* similis, sed ramulis minus attenuatis, foliis nunquam acuminatis et colore glauco pallido ab affinibus facile distinguenda.

19. L. CONTORTULA (*Mitten*). Monoica, caule arcuato repente prolifero ramis pinnatis foliolis parvis brevissimis radiculisque vestito, foliis remotis patentibus caulis latitudine transverse semiorbicularibus planiusculis in acumen brevi-lanceolatum recurvum attenuatis nervo latiusculo in apice evanido integerrimis, cellulis distinctis, rameis ovatis ramulinis ovalibus serrulatis nervo concolori pellucidiore sub apice evanido marginibus dorsoque papillis brevissimis erosulis obscuris, perichætialibus externis patulis internis erectis ovatis serrulatis nervo crassiusculo in apiculum elongatum sublævem excurrente, theca in pedunculo elongato horizontali ovali ?, operculo longe subulato rostrato.

Hypnum contortulum, *Wils. MSS.* (*si non* H. Schiedeanum, *Wils. in Sched.*).

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1124).

*L. gratæ* et *L. remotifoliæ* similis; a priore pedunculo lævi, a secundo foliis caulinis non ovatis sed basi semiorbiculatis.

20. L. tamariscella. (Hypnum, *C. Müller*, *Bot. Zeit.* 1854, p. 573.)

*Hab.* In mont. Nilghiri, *Schmid.*

21. L. MINUSCULA (*Mitten*). Monoica, caule repente foliolis subnudo, foliis patentibus semiorbiculato-hastatis caulis latitudine in acumen breve lanceolatum angustatis nervo concolori angusto in apice evanido margine minute crenulatis, cellulis rotundatis distinctis, rameis ovatis, ramulinis ovalibus acutis nervo concolori pellucido sub apice evanido, marginibus crenulatis dorso papillis scabris obscuris, perichætialibus ovatis acumine elongato latiusculo recurvo marginibus serrulatis nervo sub vel in apice evanido, theca in pedunculo longissimo horizontali arcuata ovali-cylindrica, operculo hemisphærico brevi-rostrato, peristomio dentibus dorso asperis interno processibus æquilongis ciliis brevibus nullisve in membrana ad dentium tertiam partem longitudinis exserta.

Hypnum minusculum, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., ad ligna emortua, *J. D. Hooker et T. Thomson* (No. 1071, 1072, 1092).

*L. contortulæ* simillima, sed foliis crenulatis, perichætialibus apicibus latioribus recurvis, nervo non excurrente.

22. L. SPARSIFOLIA (*Mitten*). Monoica, cæspitosa, caule gracili arcuato repente foliolis dense vestito ramis pinnatis bipinnatisve ramoso, foliis parvis remotis caule angustioribus patulis hastatis acuminatis nervo sub apice evanido margine minute crenulatis, cellulis distinctis papillosis, rameis hastatis acuminatis nervo tenui pellucidiore ramulinisque ovatis acutis marginibus erosis cellulis papillosis obscuris, perichætialibus erectis ovato-subulatis serrulatis nervo percurrente, theca in pedunculo elongato rubro horizontali ovali, peristomio interno luteo processibus ciliisque binis trabeculatis interpositis dentium longitudinem æquantibus in membrana ad dentium dimidium exserta.

*Hab.* In Nepal, *Wallich*.

*L. leptocladæ*, Taylor, similis, theca tamen horizontali, peristomio perfecto, diversa.

23. L. remotifolia, *Hooker*.

*Hab.* In Nepal, *Wallich*! In Assam superiore, *Griffith*!

24. L. haplohymenium. (Hypnum, *Harvey, Lond. Journ. Bot.* 1840, ii. p. 21.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*; Sikkim, *J. D. Hooker*! (No. 1113, 1114, 1115). Kumaon, *Strachey et Winterbottom*!

25. L. INVESTIS (*Mitten*). Monoica, exilis, caule repente foliolis nudo, ramis pinnatis, foliis caulinis ovatis nervo indistincto, rameis ovatis incurvis obscuris nervo distincto subpellucido sub apice evanido, ramulinis oblongis obtusis, omnibus marginibus crenulatis papillosis, perichætialibus e basi subrotunda subulatis enerviis parce denticulatis, theca in pedunculo breviusculo horizontali minuta obovata macrostoma angulosa subcarnosula, peristomio normali?

*Hab.* Prope Moulmein, ad rupes, *Rev. D. Parish*!

Minutissima, fere byssoidea, et notis dictis ab affinibus facile distinguenda.

## 5. HETEROCLADIUM, *Schimper*.

Pleurocarpicum. *Folia* binervia, cellulis rotundatis oblongisve.

1. H. SUBINTEGRUM (*Mitten*). Caule repente vage pinnato, foliis laxe imbricatis late ovatis sensim in apiculum piliformem acuminatis nervis binis paulo ultra medium evanidis margine integerrimo, cellulis baseos ad angulos minoribus rotundatis obscurioribus cæteris oblongis pellucidis lævibus, foliis rameis ovato-lanceolatis apice subserrulatis.

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla (inter *Anœctangium Thomsoni* repens), *T. Thomson*!

*H. dimorpho* et *H. heteroptero* intermedium; a priore ramis vagis, foliis laxius imbricatis apiculatis, a secundo ramis non compressis et foliis diversiformibus subintegerrimis diversum.

## 6. Callicostella, *Mitten.*

Hookeria (section v., Callicostella), *C. Müller, Synops.* ii. p. 216.

1. C. papillata. (Hookeria, *Mont.*)

*Hab.* In Bengalia, in collibus Garrow, *Wallich*!

A genere *Hookeria*, cujus *H. lucens* typus originalis est, habitu, necnon foliorum structura, aliena.

## 7. Rhacopilum, *Brid.*

1. R. orthocarpum. Dioicum? caule repente radiculoso, ramis breviusculis, foliis ovatis obtusiusculis nervo in pilum folii tertiam longitudinis partem æquante excurrente stipuliformibus ovato-lanceolatis sensim in pilum attenuatis marginibus ut in lateralibus minutissime serrulatis, cellulis conformibus oblongis distinctis, perichætialibus ovatis subulatis vagina pilosa, theca in pedunculo elongato stricto cylindracea erecta plicata, operculo conico rostrato, peristomio dentibus pallidis interno processibus dicranis ciliis brevissimis hyalinis, annulo latiusculo composito, calyptra pilosa.

R. orthocarpum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim (No. 697); in Nepal reg. subtrop., *J. D. Hooker* (No. 695). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 694).

A congeneribus, theca erecta, facile cernendum.

2. R. Indicum (*Mitten*). Dioicum? caule prostrato laxe subpinnatim ramoso, foliis elongato-ovatis acuminatis nervo excurrente setiformi longe cuspidatis marginibus convolutaceo-incurvis ad apicem minutissime serratis subintegerrimis, cellulis parvis obscuris, foliis stipuliformibus ovato-lanceolatis longe cuspidatis, perichætialibus conformibus paraphysibus numerosis, theca in pedunculo elongato trigono gracili suberecta ætate inclinata cylindrica arcuata plicata ore obliquo, operculo conico rostrato, peristomio generis, calyptra pilis paucis appressis.

R. cristatum, *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner* (No. 696, 698, 700).

*R. cristato* affine, foliis autem rigidioribus subintegerrimis convolutaceis certe recedit.

3. R. Schmidii, *C. Müller, Bot. Zeit.* 1854, p. 558.

*Hab.* In mont. Nilghiri, *Schmid.*

"Habitus *R. anomali.*" Etiam *R. tomentoso* et *R. spectabili*, ex cl. auctore, comparandum.

## § XIV. Mniaceæ.

**Bryaceæ ex parte, Fissidentaceæ, Hookeriaceæ ex parte, *Schimp. Coroll.* *Folia* cellulis superioribus hexagonis limitibus firmis cartilagineis ut plurimum cartilagineo-marginata, sæpe distichacea. *Caules* parce ramosi.**

### 1. Fissidens, *Hedw.*

#### * *Adiantoideæ.*

1. **F. nobilis, *Griff. Not.* p. 427; *Icon. Plant. Asiat.* ii. t. 83. f. 3. (F. filicinus, *Dozy et Molk. Bryol. Javan.* t. 7.)**

***Hab.* In Himalayæ reg. temp., Nepal, *Wallach*! Sikkim, *J. D. Hooker* (No. 634, 635). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 621, 625, 642); in rupibus arenosis ad Mumbree, et in rupibus agri Muttack, *Griffith*! In Ceylon, *Gardner* (No. 628). Etiam in ins. Javæ et Hong-Kong.**

2. **F. acutifolius (*Mitten*). Caule elongato fasciculato ramoso, foliis confertis patentibus lanceolatis sensim acutis nervo fusco excurrente, lamina folii vera vix ad medium producta æquali acuta, dorsali basi contracta in caulem non decurrente, omnium laminarum marginibus incrassatis fuscis minute scabris, cellulis opacis.**

**F. laxifolius β, *Griff., in Herb. Ward.***

***Hab.* In Assam superiore, Negrogam versus, *Griffith*!**

**Structura foliorum *F. Japonico F. nobilique* similis, sed frondibus angustioribus. A *F. taxifolio*, foliis angustis crasse marginatis et statura altiore diversa.**

3. **F. anomalus, *Mont.* (F. neckeroides, *Griff. Not.* p. 426; *Icon. Plant. Asiat.* ii. t. 83. f. 1.—F. cryptotheca, *Dozy et Molk. Bryol. Javan.* t. 6.)**

***Hab.* In mont. Nilghiri, *Perrottet*! *Gough*! In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 636). In mont. Khasian., *Griffith*! et in reg. temp., *J. D. Hooker et T. Thomson* (No. 639). In Ceylon, *Gardner*! (No. 627).**

4. **F. cristatus. Dioicus, foliis marginibus omnibus pallidioribus crenulato-serratis, cellulis ad folii medium obscuris, sed ad nervum utrinque serie unica cellularum elongatarum pellucidarum notatis, perichætialibus parvis, theca in pedunculo semunciali horizontali ei *F. taxifolii* simili.**

**F. cristatus, *Wils. l. c.* p. 294.**

***Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 624).**

***Caulis* bi- triuncialis. *F. adiantoidi* quamvis valde similis, foliis paululum acutioribus et cellulis ad nervum pellucidis statim cernendus.**

5. **F. taxifolius, *Hedw., Griff. Icon. Plant. Asiat.* ii. t. 81. f. 2.**

***Hab.* In Nepal, *Wallich*! In mont. Khasianis, ad Mumbree, *Griffith*!**

6. F. sylvaticus, *Griff. Not.* p. 429; *Icon. Plant. Asiat.* ii. t. 81. f. 1. (F. Javanicus, *Dozy et Molk. Bryol. Javan.* t. 3.—F. falcatus, *Wils. MSS., in adnot. ad* F. pallidum, *Fl. Nov. Zeland.* ii. p. 62.)

*Hab.* In mont. Khasian., ad Mumbree, *Griffith*! Madras, *Wight*! In Kumaon reg. temp., *Strachey et Winterbottom*!

** *Immarginatæ.*

7. F. areolatus, *Griff. Not.* p. 428; *Icon. Plant. Asiat.* ii. t. 83. f. 2. (F. polypodioides, var., *Wils. l. c.* p. 294.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 520). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 622), *Griffith*! Moulmein, in monte Ava-labo, *Rev. D. Parish*!

*F. polypodioidi* maxime affinis, sed foliis non obtusatis et cellulis paululum majoribus recedens.

8. F. OBSCURUS (*Mitten*). Caule elongato, foliis patentibus lanceolatis, nervo sub summo apice evanido, lamina vera ad folii medium protracta apice inæquali, dorsali basi contracta, laminis omnibus integerrimis immarginatis, cellulis parvis opacis substantia molli.

Fissidens, No. 9, *Griff. Not.* p. 430.

*Hab.* In mont. Khasian., in rupibus rorantibus, Moflong, *Griffith*!

*Caulis* uncialis, cum foliis latitudine trilinearibus. Habitu *F. serrulati*, sed foliis integerrimis; *F. polypodioidi* affinior, a quo foliis non obtusatis et substantia opaciore differt.

9. F. CIRCINALIS (*Mitten*). Caule decumbente innovationibus devolutis ramoso, foliis patentibus lanceolatis apice obtuso tenui-membranaceis paululum undulatis nervo pallido tenui in mucronulum excurrente, lamina vera ad medium producta, lamina dorsali ad basin subito contracta in caulem non decurrente, laminis omnibus ob cellulas exstantes minute crenulatis, cellulis subobscuris.

*Hab.* In montibus supra Avam.

Luteo-fuscus, caulibus uncialibus circinato-devolutis, foliis obtusis undulatis teneris, a consimilibus remotiusculus.

10. F. grandifrons, *Brid.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson* (No. 629, 632, 640, 643).

11. F. INVOLUTUS. Caule elongato sub perichætio innovante, foliis patulis lanceolatis siccitate devolutis margine paululum pallidiore apicem versus crenulatis, lamina vera immarginata integerrima, lamina dorsali ad basin subito desinente rotundata in caulem non decurrente, cellulis subobscuris, nervo pallido, perichætialibus subconformibus, theca in pedunculo brevi ovali erecta.

F. involutus, *Wils. l. c.* p. 294.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 619, 641).

Luteus. *Caulis* uncialis longiorve, simpliciusculus, foliis siccitate ad caulis ventrem volutis. Habitu aspectuque *F. osmundoidi* similis.

12. F. JUNGERMANNIOIDES (*Griff. Not.* p. 425; *Icon. Plant. Asiat.* ii. t. 81. f. 4). Dioicus? caule elongato gracili siccitate deorsum curvato, foliis lanceolatis inter se remotiusculis, lamina vera inæquali, dorsali in caulem late decurrente, nervo fusco sub summum apicem evanido marginibus subcrenulatis quasi incrassatis opacioribus, cellulis minutis subobscuris, theca in pedunculo brevi terminali ovali erecta inclinatave.

*Hab.* In mont. Khasian., in ripis ad Mumbree, *Griffith*!

Ab affinibus, margine foliorum latiusculo opaciore obscuriore quasi incrassato, facile distinguitur.

13. F. FIRMUS (*Mitten*). Dioicus? caule elongato gracili fasciculatim ramoso rigido, foliis patentibus lanceolatis, lamina vera latiuscula supra medium protracta apice inæquali margine lato cartilagineo, lamina apicali dorsalique ad basin contracta immarginatis integerrimis nervo obscuriore, cellulis parvis rotundis distinctis areolatis, theca in pedunculo brevi terminali ovali erecta.

*Hab.* In Ceylon, in monte Adam's Peak, *Gardner*!

*F. jungermannioidi* statura facieque similis, rigidior tamen, foliis arctius imbricatis, lamina vera longiore marginata et lamina apicali dorsalique immarginatis. *Caulis* sesquiuncialis, cum foliis latitudine linearis. *Pedunculus* linearis. *Folia* superiora lutea; inferiora nigricantia.

14. F. OBSCURUS (*Mitten*). Dioicus, caule elongato gracili simplici, foliis remotiusculis lanceolatis, lamina vera ad medium protracta, apicali dorsalique basi rotundata contracta integerrimis apiceve vix crenulatis, nervo concolori tenui excurrente apiculatis, cellulis minutis subobscuris, theca in pedunculo elongato gracili horizontali.

*Hab.* In Ceylon, *Gardner*!

*F. jungermannioidi* similis, sed foliis nervo concolori et marginibus nullo vestigio incrassationis. *Caulis* sexlinearis. *Pedunculus* trilinearis.

15. F. ELONGATUS (*Mitten*). Caule elongato subsimplici subfasciculatimve ramoso, foliis densis patentibus lanceolatis acuminatis, lamina vera ad medium producta apice inæquali, apicali dorsalique ad basin abrupte immarginatis integerrimis, nervo fusco, cellulis rotundis parvis pellucidis.

F. No. 10, *Griff. Not.* p. 431.

*Hab.* In mont. Khasian., in arboribus prope spelumcas Moosmai, *Griffith*!

*Caulis* bi- triuncialis, cum foliis latitudine fere bilinearis. *Color* luteo-fuscus. Statu humido vel sicco vix mutatur.

16. F. DISCOLOR (*Wils. l.c.* p. 294). Dioicus, caule elongato simplici, foliis remotis patentibus late lanceolatis obtusis vel nervo concolori in apiculum brevem excurrente, lamina vera ad medium protracta, dorsali in caulem sensim decurrente, laminis omnibus integerrimis

immarginatis, cellulis parvis parietibus crassis distinctis pellucidis, theca in pedunculo brevi gracili pyriformi erecta inclinatave.

*Hab.* In Ceylon, *Gardner*! (No. 631).

*F. jungermannioidi* subsimilis, foliis autem latioribus obtusioribus, cellulis distinctis crasse limitatis.

17. F. DIVERSIFOLIUS (*Mitten*). Dioicus? caule breviusculo gracili simplici, foliis remotiusculis ovatis acutis obtusiusculisve, nervo sub apice evanido, lamina vera ultra medium producta, dorsali basi angustata, laminis omnibus integerrimis immarginatis, cellulis pellucidis, theca in pedunculo elongato ovali erecta inclinatave.

F. debilis, *Wils. l. c.* p. 294.

*Hab.* In ripis humidis fluvii Soane, *J. D. Hooker* (No. 633). In Bootan, *Nuttal*!

Gracilis, *F. obtusifolio* similis, sed foliis minus obtusis et in caule fertili acutiusculis. *F. bryoides*, Griff. Icon. Plant. Asiat. ii. t. 81. f. 5 . , verisimiliter huc pertinet.

18. F. PULCHELLUS (*Mitten*). Monoicus, caule elongato ramoso, foliis patentibus late lanceolatis apice brevi-apiculatis, lamina vera æquali ad medium protracta, dorsali ad basin in caulem decurrente, omnibus laminis immarginatis minute crenulato-serrulatis, cellulis minutis subobscuris, nervo pellucidiore luteo-fusco excurrente, theca in pedunculo brevi gracili ovali-cylindrica inclinata leptodermi pallida.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, in monte Tonglo, alt. 8000 ped. (in cæspite *F. anomali*), *J. D. Hooker*.

*F. Holliano* affinis, sed major et foliis lamina vera immarginata. *Caulis* uncialis, innovationibus pluribus ramosus, cum foliis latitudine circiter linearis. *Pedunculus* linearis. *Theca* flexura pedunculi inclinata tenera. *Folia* viridia, cellulis subindistinctis. Fortasse icon Griffithii *F. bryoidis* (Icon. Plant. Asiat. ii. t. 81. f. 4) huc referenda est.

19. F. CRENULATUS (*Mitten*). Monoicus, caule brevi gracili, foliis patentibus deorsum vergentibus lanceolatis sensim acutis, lamina vera hyalina cartilaginea marginata integerrima, dorsali ad basin abrupte contracta apicalique minute crenulata, nervo translucente luteo, cellulis minutis opacis, perichætio terminali vel in ramulo brevi lateral foliis subconformibus, theca in pedunculo elongato gracillimo ovali erecta arcuatione pedunculi inclinata, operculo conico longirostrato, flore masculo in ramo brevi ad pedem fœminei vel minuto in axillis foliorum caulinorum gemmiformi.

*Hab.* In Nepal, *Wallich*!

*F. eleganti* similis, foliis tamen angustioribus minus opacis obscurisque et margine minus distincte crenulatis. *Theca* minuta, ut plurimum ex eodem caule plures.

20. F. serratus, *C. Müller, Synops.* i. p. 65; ii. p. 527.

*Hab.* In mont. Nilghiri, *Perrottet*!

Foliis pulchre crenato serrulatis et calyptra scabra a reliquis facile notus.

21. F. PERPUSILLUS (*Wils. l. c.* p. 294). Dioicus, caule exili brevi, foliis patentibus late lanceolatis acutis, lamina vera ad medium protracta apice inæquali margine vel nullo vel interdum cartilagineo semimarginata, lamina dorsali ad basin contracta in caulem non decurrente apicalique immarginata minutissime erosis, nervo pallidiore, cellulis minutis obscuris subopacis, theca in pedunculo gracili horizontali ovali, operculo longirostrato.

*Hab.* In Ceylon, *Gardner*! (No. 630).

*F. crenulato* similis, sed foliis fere duplo latioribus in eodem caule, lamina vera irregulariter marginata.

### *** *Bryoideæ.*

22. F. BIFORMIS (*Mitten*). Dioicus? caule brevi, foliis circiter sexjugis patentibus lanceolatis sensim acutis, lamina vera ad medium producta cellulis oblongis majoribus subpellucidis areolata, margine latiore, dorsali apicalique tenuimarginatis integerrimis cellulis minutis opacis, theca in pedunculo elongato ovali erecta, operculo longirostrato.

F. viridulus, *Wils, l. c.* p. 294.

*Hab.* In Ceylon, ad Matale, *Gardner* (No. 626).

*F. exili* fere minor, foliis lamina vera laxiore subpellucide, et laminis apicali dorsalique obscure opace areolatis, facile distinctus. *Caulis* vix linearis. *Pedunculus* sesquilinearis.

23. F. Ceylonensis, *Dozy et Molk. Bryol. Javan.* t. 3. (F. incurvus, var., *Wils. l. c.* p. 294.)

*Hab.* In Ceylon. In mont. Nilghiri, *Perrottet*! In Himalayæ reg. temp., Sikkim, *J. D. Hooker* (No. 638). Simla, *T. Thomson*!

24. F. viridulus, *Wahl.*

*Hab.* In Himalayæ occident. reg. temp., Kumaon, *Strachey et Winterbottom*!

25. F. bryoides, *Hedw.*

*Hab.* In Bengalia inferiore et in mont. Khasian. locis variis, *Griffith.*

Species vera vix est, probabiliter e pluribus parvis a Griffithio composita.

26. F. Schmidii, *C. Müller, Bot. Zeit.* 1853, p. 18.

*Hab.* In mont. Nilghiri, *Schmid.*

27. F. LONGISETUS (*Griff. Not.* p. 425; *Icon. Plant. Asiat.* ii. t. 81. f. 4). Caule simplici elongato, foliis lineari-scalpelliformibus integerrimis marginatis, perichætialibus similibus, seta laterali caulem subæquante, capsula inclinata cernuave oblongo-ovata, operculo e basi subhemisphærica breviter et oblique rostrato capsula breviore.—*Griff. l. c.*

*Hab.* In Assam superiore ripis Mumbree, *Griffith.*

Proximus *F. bryoidi*, a quo differt tantum (an satis?) setis lateralibus elongatis. A *F. adiantoide*, statura minore, foliis integerrimis, peri-

chætialibus caulinis subsimilibus operculique rostro brevi discrepat.—*Griff. l. c.*

## 2. Rhizogonium, *Brid.*

1. R. spiniforme, *Bruch.* (Hypnum, *Linn.*)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 646, 647, 652). In Assam, *Simons*! In Ceylon, *Gardner* (No. 648, 650, 651).

## 3. Mnium, *Dill.*

### * *Orthomnion.* Theca erecta.

1. M. crispum (*Mitten*). Dioicum, caule sterili longe repente radiculoso fertili erecto breviusculo, foliis patentibus oblongo-ovatis nervo in mucronem excurrente marginibus incrassatis integerrimis, cellulis parvis hexagonis marginalibus in seriebus quaternis elongatis luteis, perichætialibus spathulatis, theca in pedunculo elongato ovali erecta, ore parvo, operculo conico brevi-rostrato, peristomio dentibus pallidis interno ——? calyptra nuda.

Orthomnion crispum, *Wils. l. c.* p. 368.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 657, 677, 678).

2. M. trichomitrium (*Mitten*). Dioicum, habitu *M. crispi*, foliis late spathulatis nervo in mucronem brevem excurrente margine angusto integerrimo, cellulis parvis hexagonis marginalibus in seriebus trinis angustis, perichætialibus angustioribus, theca in pedunculo elongato erecta ovali, peristomio ——? calyptra ramentis stramineis crispulis vestita.

Orthotrichum? bryoides, *Griff. Not.* p. 404; *Icon. Plant. Asiat.* t. 77. f. 3.—Orthomnion trichomitrium, *Wils. l. c.* p. 368.

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 655, 656). Locis humidis ad Sururem, *Griffith*!

A *M. crispo*, foliis basi angustatis spathulatis, cellulis paululum laxioribus et calyptra ramentacea, recedit.

### ** *Eumnium.*

3. M. orthorhynchum, *Brid.*

*Hab.* In Tibet. occid. reg. temp. et alp., *T. Thomson*! (No. 667).

4. M. serratum, *Brid.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*; et in mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (fragmenta).

5. M. lycopodioides, *Hook.*

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 644, 645). In Tibet. occid. reg. temp., *T. Thomson*.

6. M. heterophyllum, *Hook.*

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Simla, *T. Thomson*! (No. 653).

7. M. rostratum, *Schw.*

*Hab.* In Himalayæ boreali-occident. (Jamu) et in Tibet. occid. reg. temp., *T. Thomson*! (No. 663, 664, 665, 684).

8. M. CORIACEUM (*Griff. Not.* p. 445; *Icon. Plant. Asiat.* ii. t. 91. f. 3). Synoicum, *M. rostrato* simillimum, foliis coriaceis, parietibus cellularum incrassatis, margine —— ?

*Hab.* In montibus Khasian. ad rupes humidas Maamloo, *Griffith*!

*M. rostrato* valde affine, sed foliis ob incrassationem cellularum parietum coriaceis.

9. M. DILATATUM (*Wils. l. c.* p. 368). Habitu *M. rostrati*, foliis oblongis obtusis nervo sub apicem evanido margine integerrimo, cellulis omnibus conformibus hexagonis iis *M. rostrati* 3–4-plo majoribus marginalibus vix conspicuis in serie unica elongatis angustis.

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*! (No. 670).

*M. rostrato* paulo major, cellulis majoribus. A *M. succulento* cellulis minoribus tenerioribus differt.

Caules repentes tantum vidi.

10. M. SUCCULENTUM (*Mitten*). Synoicum, foliis ovali-oblongis obtusis nervo percurrente marginibus dentatis, cellulis laxis marginalibus conformibus intensius coloratis, theca in pedunculo elongato horizontali pendulave oblonga, operculo conico rostrato, peristomio normali.

M. rhynchophorum, ex parte, *Wils. l. c.* p. 367.

*Hab.* In Nepal orient. reg. temp., *J. D. Hooker* (No. 680) *et Wallich*! In Assam, *Griffith*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*!

*M. rostrato* habitu omnino simile, sed foliis paululum majoribus, cellulis sexies majoribus succulentis, statim distinguitur. *Cellulæ* in folii medio oblongæ, prosenchymate distortæ.

11. M. rhynchophorum, *Hook.* (Bryum longirostrum, *Griff. Not.* p. 447; *Icon. Plant. Asiat.* ii. t. 91. f. 2.)

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 666, 668, 669, 681). Kumaon, *Strachey et Winterbottom.* Simla, *T. Thomson*! (No. 685). In mont. Nilghiri, *Gardner*! In mont. Khasian. reg. temp., *Griffith*! *et J. D. Hooker et T. Thomson* (No. 662). In Ceylon, *Gardner* (No. 671).

12. M. undulatum, *Hedw.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker.*

13. M. cuspidatum, *Hedw.*

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson* (No. 660).

14. M. trichomanes, *Mitten, in Hook. Journ. of Bot.* 1856, p. 231. (M. cuspidatum *et* M. rostratum, *Wils. l. c.* p. 367, 368.)
*Hab.* In Himalayæ boreali-occident. reg. temp., Kumaon, *Royle*! *et T. Thomson* (No. 664, 679, 683), *Strachey et Winterbottom*!

15. M. medium, *B. & S.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim ad Kursiong, alt. 4000 ped. (fragmentum), *J. D. Hooker*!

16. M. punctatum, *Hedw.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 672, 673, 674).

## 4. Timmia, *Hedw.*

1. T. Austriaca, *Hedw.*
*Hab.* In Tibet. occid. et Himalayæ occid. reg. temp. ad Jamu, *T. Thomson*! (No. 687, 688).

## 5. Mniadelphus, *C. Müller.*

1. M. spathulatus, *C. Müller, Synops.* ii. pp. 24, 661.
*Hab.* In Ceylon insula, *Gardner* (No. 708).

2. M. obovatus. (Hookeria obovata, *Griff. Not.* p. 474; *Icon. Plant. Asiat.* ii. t. 99. f. 1.)
*Hab.* In mont. Khasian., ad Maamloo, *Griffith.*
E descriptione et icone Griffithii, *M. spathulato* persimillimus, florescentia autem synoica diversus.

3. M. heterophyllus. Caule procumbente, foliis patentibus compressis superioribus dorsalibus late ovalibus acutis ventralibus ovato-oblongis acutis lateralibus obovatis excavatis margine apiceque undulatis recurvis nervo sub apice evanido margine angustissime limbatis integerrimis, cellulis parvis hexagonis parietibus crassiusculis basi laxioribus elongatis oblongisve, perichætialibus parvis apiculatis.
M. heterophyllus, *Wils. in Sched.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 690).
*M. spathulato* statura et habitu similis, foliis autem flaccidioribus, lateralibus excavatis, marginibus flexuosis diversus.

4. M. humifusus. Caule procumbente, foliis compressis patentibus dorsalibus oblongis lateralibus obovatis spathulatis breviter apiculatis margine integerrimo angustissime limbatis nervo infra apicem evanido, cellulis hexagonis basi laxioribus elongatis oblongisque, perichætialibus brevibus acuminatis.
M. humifusus, *Wils. in Sched.*
*Hab.* In Himalayæ occident. reg. temp., Kumaon, *T. Thomson*! (No. 693).
*M. heterophyllo* similis, sed foliis pallide luteis ambitu magis spathulatis, cellulis fere dimidio minoribus crassius limitatis.

5. **M. SUCCULENTUS (*Mitten*). Pallide albo-viridis, glaucus, caule flaccido procumbente, foliis compressis patentibus ovalibus brevi-apiculatis nervo ad $\frac{2}{3}$ percurrente margine integerrima angustissime limbatis, cellulis majusculis hexagonis parietibus angustis basi parum majoribus.**

*Hab.* In mont. Nilghiri, *M'Ivor*!

Statura *M. paradoxi*, sed foliis ovalibus.

6. **M. CEYLANICUS (*Mitten*). Caule pusillo, foliis subcompressis ovalibus obovatisve patentibus brevi-apiculatis margine integerrimo crassiuscule limbatis nervo sub apice evanido, cellulis hexagonis tenuiter limitatis basi paulum majoribus.**

*Hab.* In Ceylon, ad "Horton Plains" (inter *Entosthodontem Busianum*), *Gardner*!

*M. Griffithii* statura similis, sed foliis brevioribus crasse marginatis, cellulis duplo triplove majoribus parietibus tenuibribus.

7. **M. Montagnei, *C. Müller, Synops.* ii. p. 22.**

*Hab.* In mont. Nilghiri, *Perrottet, Schmid.*

8. **M. GRIFFITHII (*Mitten*). Monoicus, caule ramoso, foliis compressis patentibus ovali-spathulatis acutis margine integerrimo anguste limbatis undulatis nervo sub apice evanido, cellulis basi laxis oblongis superne minoribus hexagonis, perichætialibus parvis ovatis, theca in pedunculo elongato parva ovali horizontali.**

Hookeria pulchella, *Griff. Not.* p. 476; *Icon. Plant. Asiat.* ii. t. 99. f. 3.

*Hab.* In Nepal, *Wallich.* In mont. Khasian., ad Kala Panee (inter *Diphyscium longifolium*, fragmenta), *J. D. Hooker*! et in rupibus sylvaticis madidis, Sururem, Mumbree et Myrung, *Griffith*!

A *M. Montagnei*, e descriptione, diversus videtur.

## 6. DALTONIA, *Hook.*

1. **D. APICULATA (*Mitten*). Caule brevi, foliis patentibus longe ligulatis flexuosis apice in apiculum piliformem subito contractis nervo sub apice evanido carinatis margine cartilagineis integerrimis, cellulis majusculis pellucidis, perichætialibus brevissimis ovatis, theca in pedunculo elongato superne scabro erecta inclinatave ovali, operculo conico recto-rostrato, calyptra quam operculum paululum longiore.**

*Hab.* In Nepal, *Wallich*!

A speciebus reliquis Indicis, foliis apice subito piliformi-apiculatis et cellulis laxioribus satis diversa. Statura *D. marginatæ*.

2. **D. MARGINATA (*Griff. Not.* p. 465; *Icon. Plant. Asiat.* ii. 88. f. 1).**

**Monoica, caule brevi, foliis patentibus siccitate tortis late subelliptico-lanceolatis apice acuto semitorto margine cartilagineo latiusculo limbatis nervo sub apice evanido carinatis, cellulis parvis basi oblongis superne oblongo-hexagonis, perichætialibus parvis ovatis acutis, theca in pedunculo elongato superne scabro ovali, operculo conico longe rostrato, calyptra ad thecæ dimidium attingente.**

*Hab.* In mont. Khasian., in arboribus in pinetis Moflong, *Griffith*!
A *D. splachnoide*, foliis siccitate undulatis tortisque, diversa.

3. D. FLEXIFOLIA (*Mitten*). Monoica, caule elongato, foliis flexuoso-tortis patentibus e basi elliptica late lanceolatis apice acuminatis margine cartilagineo late limbatis nervo sub apice evanido carinatis, cellulis basi laxiusculis oblongis superne minutis oblongo-hexagonis, perichætialibus brevibus, theca in pedunculo elongato superne scabro ovali.

*Hab.* In Nepal, *Wallich*!

*Caulis* circiter 6-linearis, gracilis. *Pedunculus* bilinearis. *D. marginatæ* similis, sed foliis basi laxius areolatis margine latiore et foliis siccitate non mutatis.

4. D. SEMITORTA (*Mitten*). Caule brevi, foliis patentibus siccitate flexuosis appressis lanceolatis apice acumine semitorto curvato nervo ad $\frac{2}{3}$ folii evanido carinatis margine cartilagineo integerrimo recurvo, cellulis parvis basi elongatis superne oblongo-hexagonis, perichætialibus caulinis similibus, theca in pedunculo elongato lævi subinclinata pyriformi, operculo conico recto-rostrato, calyptra ad thecæ dimidium attingente.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, ad montem Singalelah, in ramulis fruticum, alt. 11,000 ped., *J. D. Hooker*.

*D. marginatæ* statura similis, sed foliis paululum latioribus marginibus recurvis superne latioribus in apiculum longiorem acuminatis et pedunculo lævi.

5. D. SCABERULA (*Mitten*). Caule brevi, foliis patentibus siccitate tortis e basi elliptica sensim late lanceolatis planiusculis flexuosis nervo ad $\frac{2}{3}$ evanido profunde carinatis margine cartilagineo latiusculo limbatis, cellulis basi oblongis superne ovalibus subobscuris, perichætialibus brevibus, theca in pedunculo elongato scabro ovali scaberula, operculo conico rostrato, calyptra scabra.

*Hab.* In Ceylon, *Thwaites*!

*D. ovali* (Tayl.) statura accedens, foliis autem non longe acuminatis, sed apice latiusculis.

6. D. STRICTIFOLIA (*Mitten*). Caule brevi, foliis strictis patentibus anguste lanceolatis sensim acutis margine cartilagineo latiuscule limbatis nervo sub apice evanido carinatis margine recurvis, cellulis parvis longitudine latitudinem quadruplo excedente, perichætialibus brevissimis, theca in pedunculo elongato superne scabro pyriformi lævi erecta.

*Hab.* In Ceylon, *Gardner*! (Etiam e Java inter specimina *Hookeriæ papillatæ*.)

*D. splachnoidi* similis, foliis autem strictis angustis patentibus.

7. D. BREVIPEDUNCULATA (*Mitten*). Caule brevi, foliis patentibus lanceolatis attenuatis sensim piliformi-acuminatis nervo ad $\frac{3}{4}$ evanido

carinatis margine cartilagineo latiuscule limbatis, cellulis pellucidis distinctis ut plurimum suboblongo-hexagonis, perichætialibus brevissimis ovatis acutis, theca in pedunculo quam folia caulina breviore lævi ovali erecta, operculo conico rostrato, calyptra ad thecæ dimidium attingente et fimbriis incurvis eam amplectente.

*Hab.* Ad Bombay (inter specimina *Trachypodis procumbentis* ex *Herb. Kegeliano*) speciminula paucissima inveni.

A *D. splachnoide* foliis duplo longioribus diversa, et inter species Indicas cæteras, caule brevissimo et theca ob pedunculi brevitatem a foliis non exserta, singularis.

## § XV. Hypopterygiaceæ.

**Hypopterygiaceæ, ex parte, *C. Müller, Synops.***
***Folia* tristicha, serie unica ventrali, *Amphigastriæformia*, minora.**

### 1. Cyathophorum, *Brid.*

1. C. Adiantum (*Mitten*). Rhizomate repente, caulibus simplicibus apice attenuatis decurvatis, foliis lateralibus divergentibus elongato-ovalibus brevi-acuminatis asymmetricis nervo tenui infra medium evanido marginibus ubique spinuloso-serratis cellulis oblongo-hexagonis flaccidis chlorophyllosis, foliis stipuliformibus patentibus late ovatis acuminatis enerviis superne spinuloso-serratis, perichætialibus parvis lanceolatis integerrimis vaginam crassam haud tegentibus, theca in pedunculo crasso scrabro æquilongo curvato cylindrica, operculo conico brevi-rostrato, peristomio dentibus teneris pallidis interno processibus angustis elongatis sessilibus?

C. Griffithii, *Wils. in Sched.*—Neckera Adiantum, *Griff. Icon. Plant. Asiat.* ii. t. 85. f. 2?

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 699, 704). In mont. Khasian., *J. D. Hooker et T. Thomson*! (No. 703, 704 *b*, 715), *et Griffith*!

*Caulis* sesquiuncialis, apicem versus in foliorum axillis fila articulata rufo-fusca copiosa fovens, deinde attenuatus decurvatus. *Folia* siccitate contracta, nitoris destituta, sensim a caulis basi ad medium longitudine increscentia, deinde sensim decrescentia.

2. C. Hookerianum (*Mitten*). Habitu *C. Adianti*, ramis interdum fasciculato-divisis, foliis divergentibus elongato-ovatis apice in apiculum elongatum acuminatis asymmetricis margine tenui cartilagineo luteo limbatis apicem versus remote serrulatis nervo tenui infra medium evanido, cellulis oblongo-hexagonis flaccidis, foliis stipuliformibus brevioribus late ovalibus acumine elongato recurvo nervo ultra medium evanido, perichætio ex icone Griffithii parvo, foliis ovato-lanceolatis, theca in pedunculo æquilongo cylindrica.

C. marginatum, *Wils. in Sched.*—Neckera Hookeriana, *Griff. Icon. Plant. Asiat.* ii. t. 84. f. 2, 2 A.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 702). In mont. Khasian. reg. subtrop., *J. D. Hooker et T. Thomson* (No. 701), *et Griffith*.

*C. Adianto* simillimum, foliis autem tenuiter luteo limbatis non spinuloso-serratis et stipuliformibus nervatis recedens. Caulis, eodem modo ut in præcedente, fila articulata colorata in foliorum superiorum axillis fovens.

3. C. INTERMEDIUM (*Mitten*). Habitu *C. Adianti*, foliis lateralibus divergentibus ovatis acutis breviter apiculatis asymmetricis, nervo viridi ad medium evanido, margine ventrali a basi ad medium et ultra anguste tenuiter limbatis cæterum immarginatis parcissime serrulatis subintegerrimis, foliis stipuliformibus late ovatis acutis acuminatisve cauli appressis enerviis, cellulis oblongo-hexagonis pellucidis.

*Hab.* In Himalaya occidentali, Kumaon, *Strachey et Winterbottom*!

Species præcedentibus, ut videtur, valde similis, ab utraque diversa; a *C. Hookeriano* foliis uno latere tantum tenuiter marginatis et stipuliformibus enerviis, a *C. Adianto* foliis fere integerrimis, discrepans.

## 2. HYPOPTERYGIUM, *Brid.*

1. H. flavo-limbatum, *C. Müller, Synops.* ii. p. 10. (Hypnum rotulatum, *Griff. Not.* p. 478; *Icon. Plant. Asiat.* ii. t. 98. f. 1.)

*Hab.* In Nepal, *Wallich*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 689); et in rupibus calcareis prope speluncam Moosmai et in rupibus arenosis Mumbree, *Griffith*.

2. H. tenellum, *C. Müller, Bot. Zeit.* 1854, p. 557.

*Hab.* In mont. Nilghiri, *Schmid*.

3. H. CEYLANICUM (*Mitten*). Monoicum! tenellum, stipite brevi, ramis in frondem parvam subtriangularem dispositis flaccidis, foliis rameis late ovatis asymmetricis limbo luteo tenui apice parce dentato circumductis nervo tenui paulo ultra medium evanido, e cellulis parvis utriculo primordiali repletis limitibus mollibus areolatis, foliis stipuliformibus suborbiculatis acumine brevi, nervo tenui vix medio tenus in iis ramulorum obsoleto, perichætialibus ovato-acuminatis, theca in pedunculo rubro breviusculo lævi ovali cernua, operculo magno conico rostrato, peristomio dentibus luteis processibus angustis ciliis tribus brevibus interpositis in membrana ad dentium dimidium attingente.

H. rotulatum, *Wils. in Sched.*

*Hab.* In Ceylon, *Gardner* (No. 691, 692).

Ab *H. flavo-limbato*, foliis e cellulis mollioribus, forma nervoque foliorum stipuliformium et pedunculo breviore rubro recedit. Ab *H. rotulato*, foliis rameis minus acuminatis, nervo breviore, cellulis pellucidioribus, diversum.

4. H. TIBETANUM (*Mitten*). Monoicum! stipite elongato unciali, ramis in frondem parvam rotundulam dispositis flaccidis, foliis late

ovatis asymmetricis limbo tenui luteo serrato circumductis nervo ad $\frac{3}{4}$ evanido, cellulis parvis pellucidis utriculo primordiali repletis limitibus mollibus, foliis stipuliformibus orbiculatis cuspidatis serratis nervo in cuspidem percurrente, perichætialibus parvis ovatis acuminatis, theca in pedunculo breviusculo rubro superne scabro oblonga horizontali, operculo conico longirostrato, peristomio *H. rotulati.*

H. rotulatum, var., *Wils. in Sched.*

*Hab.* In Tibet. occid. reg. temp., *T. Thomson*! (No. 682).

*H. rotulato* similis, sed foliis magis serratis, cellulis pellucidioribus, seta ad capsulæ collum scabra et operculo tenui capsulam longitudine excedente diversum.

5. H. struthiopteris, *Brid.*

*Hab.* In Ceylon, *Gardner*! In mont. Nilghiri, *Perrottet et Schmid.*

## †† Nematodonti.

*Peristomium* e stratis pluribus filorum, liberis vel interioribus in membranam plicatam coalitis, vel omnibus in processibus dentiformibus ad columellæ summitatem tympaniformem adhærentibus coadglutinatis.

### § I. Buxbaumiaceæ, *Schimp. Coroll.*

### 1. Diphyscium, *Mohr.*

1. D. longifolium (*Griff. Not.* p. 390; *Icon. Plant. Asiat.* iii. t. 96). Caulescens, foliis supremis ligulatis acutis serratis, perichætialibus retusis nervo longe excurrente, theca semiexserta.

*Hab.* In mont. Khasian. reg. temp., in saxis rupibusque montium ad Moosmai et Surureem, etiam in rupibus in sylvis Myrung, *Griffith*! ad Kala Panee, *J. D. Hooker et T. Thomson*! (No. 127). In Ceylon, *Gardner*!

*Caulis* semuncialis, inferne nudiusculus. *Folia* siccitate incurva, marginibus involutis; humida patentia. A reliquis *Diphysciis*, caule elongato, foliis serratis, facile distinguendum.

2. D. involutum (*Mitten*). Caule brevi, foliis patentibus e basi ovata erectiuscula elongata pellucido-fusca areolata angustatis et deinde dilatatis spathulato-lanceolatis apice lato obtusiusculo nervo percurrente mucronatis margine sæpe involutis levissime incrassatis integerrimis, cellulis minutis opacis interstitiis subpellucidis, perichætialibus exterioribus lanceolatis nervo in aristam longam excurrente interioribus retusis angulis acutis integris, theca peristomioque eis *D. mucronifolii* similibus.

D. longifolium, ex parte, *Griffith in Herb. Ward.*

*Hab.* In mont. Khasian., in loco ob confusionem non rite designando, *Griffith*!

*D. mucronifolio* affine, sed foliis paululum latioribus inferne contractis superne marginibus ut plurimum involutis, perichætialibus sinu et laciniis emarginationis non laceratis. A *D. longifolio*, foliis integerrimis et caule brevi, facile distinguendum. *Caulis* circiter bilinearis.

3. D. FASCICULATUM (*Mitten*). Caule elongato innovationibus fasciculatis ramoso, foliis erecto-patentibus superioribus siccitate incurvis cirrhatisque e basi ovali latiore elongata pellucide areolata longe linearibus loriformi-lanceolatis nervo excurrente mucronatis margine integerrimis levissime incrassatis, cellulis minutis opacis inter se latiuscule discretis, perichætialibus exterioribus lanceolato-subulatis interioribus linearibus apice retusis nervo excurrente.

*Hab.* In Ceylon, *Gardner* (*Herb. Peradeniense*, No. 120).

A congeneribus, caule elongato unciali longioreque ramoso, foliis longe loriformibus subnitentibus inferioribus siccatione vix mutatis valde diversum, et primo adspectu nonnullis speciebus robustis *Calymperidis* vel *Syrrhopodontis* similius.

## § II. POLYTRICHACEÆ, *Schimp. Coroll.*

### 1. ATRICHUM, *Beauv.*

1. A. SUBSERRATUM (Polytrichum undulatum, γ, subserratum, *Hook. Lond. Journ. Bot.* 1840, p. 3). Monoicum, *A. undulato* simillimum, foliis latioribus et cellulis paulum minoribus.

A. undulatum, var., *et* Catharinea flaviseta, ex parte, *Wils. in Sched.*—Polytrichum angustatum, *Griff. Not.* p. 386, *et Icon. Plant. Asiat.* ii. t. 93. f. 3, ex parte, forsan hujus loci est.

*Hab.* In Himalayæ orient. reg. temp. Simla, *T. Thomson*! (No. 1190, 1243), Nepal, *Wallich*! *J. D. Hooker*! Sikkim, *J. D. Hooker*! In mont. Khasian., *Griffith*! *J. D. Hooker et T. Thomson*! (No. 1207, 1219, 1222).

2. A. FLAVISETUM (*Mitten*). Monoicum, flore masculo in ramo brevi inter folia perichætialia oriente, cæteris ut in *A. subserrato*.

Catharinea flaviseta, ex parte, *Wils. in Sched.*

*Hab.* In Himalaya temperata, Nepal orient., *J. D. Hooker* (No. 1185, 1188, 1189). Kumaon, *Strachey et Winterbottom*! Simla, *T. Thomson*!

### 2. OLIGOTRICHUM, *Decand.*

1. O. semilamellatum. (Polytrichum, *Hook. fil. in Hook. Icon.* ii. t. 194. f. A.—O. Javanicum, *Dozy et Molk. Bryol. Javan.* p. 37, t. 28.—Polytrichum falcifolium, *Griff. Not.* p. 387; *Icon. Plant. Asiat.* ii. t. 93. f. 1.)

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker*! (No. 1216). In mont. Khasian., ad Boga Panee, *Griffith*! Himalaya, *Royle*!

## 3. Pogonatum, *Brid.*

1. P. Neesii, *C. Müller, Synops.* ii. p. 563; *Dozy et Molk. Bryol. Javan.* p. 40, t. 36.

*Hab.* In mont. Nilghiri, *Schmid.*

2. P. Himalayanum (*Mitten*). Foliis e basi oblonga lata erecta vaginante membranacea cellulis elongatis pellucidis areolata linearilanceolatis apice latiusculis, lamellis obtectis, margine a medio ad apicem dorsoque apicis dentatis, siccitate incurvis, perichætiis mox lateralibus foliis omnibus a caulinis dissimilibus inferioribus parvis ovatis acuminatis mediis e basi late vaginante acuminatis lanceolatis interioribus elongatis convolutis apice subulatis erectis angustis dentatis pallidis, theca in pedunculo rubro apice torto elongato-ovali erecta papillosa, operculo basi convexo in rostrum curvatum attenuato, calyptra thecam totam obtegente fulva.

Polytrichum alpinum, *Wils. in Sched.*

*Hab.* In Himalaya boreali-occident., *Royle*! *T. Thomson* (No. 1192). In Himalaya orient., *J. D. Hooker* (No. 1187, 1218).

*P. urnigero* valde simile, sed caulibus minus fastigiatim ramosis, perichætiis ut plurimum lateralibus, foliis interioribus longius exsertis, et foliis caulinis basi multo latiore longioreque. *P. alpino* etiam, latitudine folii baseos, simile, sed foliis non ad apicem sensim angustatis, et perichætio diverso. A *P. Neesii*, ex icone Bryologiæ Javanicæ, foliis dentibus remotioribus validioribus, perichætio exserto, et theca ætate non plicata, erecta, recedit. In speciminibus nonnullis fructus lateralis a caulis apice remotus perichætium vere laterale simulat.

3. P. microstomum, *Brown.* (P. urnigerum? *Griff. Not.* p. 389.)

*Hab.* In Himalayæ reg. temp. et alp., Nepal, *Wallich*! Sikkim, *J. D. Hooker*! (No. 1195, 1200, 1209). Kumaon, *Strachey et Winterbottom*! Mont. Nilghiri, *Perrottet*! *Gardner*! *Schmid*! *M'Ivor*! In mont. Khasian., ad Moflong, *Griffith*!

A *P. urnigero*, quocum sæpe est commutatum, foliis e basi dilatata angustatis deinde spathulato-lanceolatis latioribus et cellulis basi non subito in opacas transeuntibus certe diversum.

4. P. aloides, *Brid., Griff. Icon. Plant. Asiat.* ii. t. 92. f. 1.

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich*! Sikkim, *J. D. Hooker* (No. 1137 *b*, 1186, 1197, 1212, 1214, 1215, 1216, 1217, 1236, 1237, 1250, 1258); Simla, *T. Thomson*! (No. 1227, 1236, 1332). In mont. Khasian. locis variis, *Griffith*; et in reg. temp., *J. D. Hooker et T. Thomson*! (No. 1220, 1228, 1234, 1245, 1246, 1247). In Ceylon, *Gardner* (No. 1206, 1223, 1266). In mont. Nilghiri, *G. Thomson*! *Schmid*! In "Garrow Hills" Bengaliæ orient., *Wallich*! In Tibet. occid. reg. alp., *T. Thomson*! (No. 1263).

5. P. hexagonum (*Mitten*). Caule brevi, foliis patentibus siccitate curvatis incurvisque appressis e basi ovata cellulis lateris oblongis

quadratisque pellucidis areolata late lanceolatis obtusiusculis lamellis dense obtectis margine leviter serratis, perichætialibus conformibus, theca in pedunculo elongato ovali scaberula inclinata sicca sub orificio plicis subindistinctis sex exarata.

Polytrichum curvifolium? *Wils. in Sched.*

*Hab.* In Nepal, *Wallich*! In mont. Nilghiri, *Perrottet*! In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1244, 1248).

*P. aloidis* formis nonnullis minoribus valde simile; nec, nisi cellulis foliorum basi majoribus, distinctionem ullam veram inveni. *Theca* superficie eodem modo ut in *P. aloide* scaberula, sed plicis sex distinctioribus notata.

6. P. PATULUM (*Harvey, Hook. Icon. Plant. Rar.* t. 18. f. 1). Caule elongato, foliis patulis siccitate incurvis late lanceolatis basi vix latiore cellulis paucis elongatis areolata superne lamellis brevibus inter se subdistantibus obtectis margine ubique a lamellis satis remotiusculo a medio ad apicem serrato, perichætialibus basi longioribus convolutis, theca in pedunculo elongato brevi-ovali.

*Hab.* In Nepal, *Wallich*!

*Folia* e substantia tenuiore. A *P. aloide* et speciebus ei similibus distinctum, *P. gymnophyllo* affinius.

7. P. PROLIFERUM (Polytrichum, *Griff. Not.* p. 388; *Icon. Plant. Asiat.* ii. t. 93. f. 2). Caule elongato simplici sub perichætio prolifero, foliis siccitate crispatis humidis patentibus incurvisque e basi latiore sensim lanceolatis elamellosis subcomplicatis nervo dorso apicem versus dentato margine a medio ad apicem remote serrato, cellulis basi oblongis superioribus subobscuris mollibus, perichætialibus longioribus basi convolutaceis, theca in pedunculo elongato ovali-cylindrica erecta inclinatave, operculo convexo rostro brevi.

*Hab.* In mont. Khasian., in locis umbrosissimis infra rupes ad Sururem, *Griffith*! *et Wallich*; etiam, absque fructu, ad Churra Pungee, *Griffith*.

*P. Teysmanni* habitu staturaque simile, sed robustius, foliis longioribus.

8. P. FLEXICAULE (*Mitten*). Caule elato innovante flexuoso, foliis e basi oblonga parallela erecta sensim lanceolatis patentibus tota superficie lamellis brevissimis obscuris margine a medio ad apicem serratis, cellulis basi oblongis mox in quadratas rotundasque firmas fuscas transeuntibus.

*Hab.* In Assam, *Dna. Mack*!

Habitu staturaque *P. prolifero* simillimum, foliorum structura autem alienissimum, et etiam sterile distinctissimum. In speciminibus paucis adhuc visis caules valde sunt contorti recurvique; an hic status normalis?

9. P. SEMINUDUM (*Mitten*). Caule elongato simplici, foliis siccitate incurvis cirrhatis, humidis patulis, e basi paululum latiore erecta cellulis oblongis areolata late lanceolatis patentibus nervo lamelloso

dorso superne dentato marginibus a medio ad apicem serratis, perichætialibus angustioribus basi convolutis interioribus angustis pellucidis, theca in pedunculo elongato ovali-cylindrica ætate sexplicata.

Polytrichum seminudum, ex parte, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 1199).

*Caulis* triuncialis. *Pedunculus* uncialis. *Folia* circiter trilinearia.

10. P. NUDIUSCULUM (*Mitten*). Caule breviusculo simplici, foliis siccitate incurvis tortilibus humidis patentibus late lanceolatis superne tertiam partem latitudinis lamellosis marginibus a medio ad apicem serratis dorso ad apicem dentatis, cellulis omnibus fere conformibus minutis quadrato-rotundis, perichætialibus interioribus tribus superne paululum angustioribus, theca in pedunculo elongato flexuoso erecta subinæquali ovali-cylindrica scaberula (plicata ?), operculo conico rostrato, calyptra thecam totam obtegente.

Polytrichum seminudum, ex parte, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thompson* ! (No. 1249).

*P. aloidi* forma habituque foliorum exsiccatorum simile ; *P. seminudo* tamen magis affine, sed foliis brevioribus basi non dilatatis, cellulis omnibus fere æquilongis, recedit.

11. P. GYMNOPHYLLUM (*Mitten*). Caule elongato simplici, foliis siccitate crispatis incurvisque e basi brevi erecta parum latiore cellulis paucis oblongis areolata patulis late lanceolatis cellulis subpellucidis nervo elamelloso margine a medio ad apicem serratis, perichætialibus longioribus angustioribus superne parce lamellosis dorso dentatis, theca in pedunculo elongato ovali-cylindrica inclinata.

Polytrichum gymnophyllum, ex parte, *Wils. in Sched.*

*Hab.* In mont. Khasian. reg. subtrop., *J. D. Hooker et T. Thomson* (No. 1208, 1224). In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 1241).

*P. patulo* persimile, foliis caulinis tamen elamellosis.

12. P. MARGINATUM (*Mitten*). Caule elongato simplici, foliis siccitate tortilibus laxis patentibus late lanceolatis nervo superne lineis paucis lamellarum subindistinctis notato margine incrassato a medio ad apicem dentibus duplicatis serratis, cellulis omnibus parvis rotundatis basi pallidioribus, perichætialibus inferne latioribus superne angustioribus, theca in pedunculo elongato breviter ovali oblonga sexplicata sublævi, calyptra generis.

Polytrichum gymnophyllum, ex parte, *Wils. in Sched.*

*Hab.* In Ceylon, ad Hantani, *Gardner* (No. 1223).

*P. gymnophyllo* gracilius, foliis, in speciminibus paucis mihi obviis, compressis, margine incrassato a reliquis speciebus Indicis statim dignoscitur.

13. P. RUFISETUM (Polytrichum, *Wils. in Sched.*). Caule elongato gracili dichotomo fastigiatimque ramoso, foliis patulis e basi lata

subquadrata cellulis inferne elongatis angustis subito angustatis lanceolatis lamellis obtectis apicem versus parce serratis, perichætialibus conformibus, theca in pedunculo longo aurantiaco ovali-cylindrica erecta inclinatave, operculo breviter conico rostro brevi, calyptra pilosa thecam totam obtegente, flore masculo foliis perigonialibus hastato-ovatis breviter acuminatis.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 1193, 1194, 1204, 1235).

*P. Teysmanni* (Dozy et Molk.) valde affine, sed foliis a basi quadrata subito angustatis angustioribus recedit.

14. P. FUSCATUM (*Mitten*). Caule elongato simpliciusculo, foliis siccitate incurvis subcrispatis humidis patulis e basi subquadrata, cellulis infimis parvis firmis oblongis cæteris rotundis paululum angustatis lanceolatis acutis lamellis obtectis margine e medio ad apicem dorsoque argute serratis, perichætialibus externis conformibus internis angustioribus, theca in pedunculo unciali erecta inclinatave ovali-cylindracea, operculo hemisphærico brevirostrato, calyptra thecam totam obtegente.

P. cirrhatum, *Wils. in Sched.*

*Hab.* In Himalayæ reg. temp., Nepal, *Wallich* ! Sikkim, *J. D. Hooker* ! (No. 1225, 1233, 1242). In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* ! (No. 1203, 1230). Kumaon, *Strachey et Winterbottom* !

*P. cirrhato* dimidio minus, foliis fuscis basi dilatata angustiore integerrima.

15. P. FASTIGIATUM (*Mitten*). Caule elongato simplici dichotome fastigiatimque ramosove, foliis siccitate incurvis cirrhatis a basi latiore ovata erecta, cellulis parvis elongatis parallelogrammaticis patulis divergentibusque longe lanceolatis lamellis brevibus densis obtectis, margine a basi infima ad apicem dorsoque superne serratis, perichætialibus basi longiore convolutaceis, theca in pedunculo brevi semunciali ovali-cylindrica erecta inclinatave, operculo convexo breviter rostrato.

Polytrichum convolutum, *Wils. in Sched.*

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* ! (No. 1182, 1183, 1202, 1240). In mont. Khasian., ad Kollong, *J. D. Hooker et T. Thomson.*

Species *P. cirrhato* et *P. macrophyllo* (Dozy et Molk.) intermedia. A *P. convoluto* Americæ meridionalis, icone Schwægricheniano satis bene illustrato, foliis angustioribus opacioribus rigidioribus et a basi infima serratis recedens; a *P. cirrhato*, ad quod serratione foliorum accedit, foliis latioribus tota superficie lamellis brevissimis obscura, siccitate magis crispatis crassioribus, theca in pedunculo breviore; a *P. macrophyllo*, statura affiniore, foliis magis cirrhatis obscuris et e basi serratis, diversa.

## 4. Polytrichum, *Dill.*

### * *Cephalotrichum*, B. & S.

1. P. perichætiale, *Mont.*

*Hab.* In mont. Nilghiri, *Perrottet*! *Schmid*! In Himalayæ reg. temp. et alp., Sikkim, *J. D. Hooker*! (No. 1213, 1239, 1251, 1251 *b*). Simla, *T. Thomson*! (No. 1262). Nepal, *Wallich*!

2. P. Thomsoni (*Mitten*). Caule breviusculo, foliis strictissimis patulis, comalibus divergentibus, e basi orbiculari subquadratave latiore subpellucida cellulis brevibus areolata lanceolatis apice in cuspidem piliformem fuscam acuminatis, lamellis brevibus obtectis, marginibus incurvis dentibus spiniformibus paucis serratis, perichætialibus erectioribus superne angustatis, theca in pedunculo unciali flexuoso fusco ovali, peristomio et calyptra *P. perichætialis*.

P. pungens, *Wils. in Sched.*

*Hab.* In Himalayæ boreali-occident. reg. temp., Simla, *T. Thomson*! (No. 1231).

*P. perichætiali* simillimum, sed foliis basi brevioribus superne spinoso-dentatis et cuspidiferis facile distinctu.

3. P. tortipes (*Wils. in Sched.*). Caule breviusculo, foliis siccitate curvatis tortisque humidis erectis e basi lata oblongo-ovata inferne cellulis laxis pellucidis elongatis parallelogrammaticis areolata lanceolatis lamellis obtectis marginibus incurvis dentibus remotis serratis apice in mucronem acuminatis, perichætialibus convolutis superne angustatis, theca in pedunculo rubro-fusco flexuoso suberecta inclinatave ovali oblonga inæquali, operculo convexo rostro brevi curvato, calyptra thecam totam obtegente.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1184, 1210).

A *P. perichætiali*, foliis siccitate curvatis dentatis, statim distinguitur; a *P. Thomsoni*, foliis longioribus basi multo laxius areolatis, et theca inæquali.

### ** *Eupolytrichum.*

4. P. densifolium (*Wils. in Sched.*). Caule breviusculo unciali, foliis densiusculis siccitate erectis appressis, comalibus parum curvatis humidis patulis e basi subquadrata latiore superne dilatata tenuiter hyalino-marginata cellulis oblongis pellucidis areolata lanceolatis sensim acutis lamellis obtectis margine ubique parvo spatio a lamellis discreto dorsoque apice serratis, perichætialibus basi longioribus convolutaceis superne angustioribus, theca in pedunculo longiusculo (biunciali) ætate horizontali subcubica.

*Hab.* In Himalayæ orient. reg. temp. et alp., Sikkim, *J. D. Hooker* (No. 1198, 1205).

Formis communibus *P. juniperini P. gracilisve* habitu, statura coloreque simile, sed foliis margine non inflexis, et perichætialibus a caulinis non adeo diversiformibus.

5. P. XANTHOPILUM (*Wils. in Sched.*). Caule elongato, foliis siccitate appressis curvatis falcatis, humidis patentibus, e basi subquadrata cellulis elongatis angustissimis pellucidis areolata lanceolatis apice latiusculis lamellis obtectis margine apiceque dorso dense serratis, perichætialibus basi longiusculis convolutaceis, theca in pedunculo elongato ætate horizontali tetragona suboblonga inter basin et apophysin contracta. *Calyptra* juvenilis pallide flava.

*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1191).
*Pogonato urnigero*, var. *crasso*, simile, sed theca tetragona.

### 5. LYELLIA, *R. Br.*

1. L. crispa, *Hook.* (Polytrichum, No. 6, *Griff. Not.* p. 390.)
*Hab.* In Himalayæ centralis et orient. reg. temp., Nepal, *Gardner, Wallich*! *J. D. Hooker* (No. 1180). Sikkim, *J. D. Hooker* (No. 1181). In collibus Bhotan et Abor, *Griffith*!

2. L. bifurcata, *Bél. Voy. dans l'Ind. Orient., Bot.*, 11. *Crypt.* p. 99.
*Hab.* In peninsula Indiæ orient., in locis altioribus circa locum Gâtes dictum, *Bélanger* (sterilis).
Forsan species *Pogonati* quædam.

## S. 2. HETERODICTYA. *Foliorum cellulæ dimorphæ.*

### § I. SPHAGNACEÆ.

### 1. SPHAGNUM, *Dill.*

1. S. cymbifolium, *Dill.*
*Hab.* In Himalayæ orient. reg. temp., Sikkim, *J. D. Hooker* (No. 1283, 1287, 1289, 1292).

2. S. cuspidatum, *Ehrh.*
*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1284, 1286, 1290, 1291).

3. S. acutifolium, *Ehrh.* (S. fimbriatum, *Wils. l. c.* p. 290.)
*Hab.* In Nepal orient. *J. D. Hooker*! (No. 1285).

4. S. Gedeanum, *Dozy et Molk. Bryol. Javan.* t. 19.
*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson*!

5. S. Junghuhnianum, *Dozy et Molk. Bryol. Javan.* t. 18. (S. fimbriatum, var., *Wils. in Sched.*)
*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1293).

6. S. KHASIANUM (*Mitten*). *S. subsecundo* simillimum, sed foliis cau-

linis cellulis omnibus repletis tenui-marginatis, caule pallido, cortice ex unica serie cellularum composito.

S. contortum, var., *Wils. l. c.* p. 290.—S. obtusifolium, *Griff. Not.* p. 386; *Icon. Plant. Asiat.* t. 76. f. 1?

*Hab.* In mont. Khasian. reg. temp., *J. D. Hooker et T. Thomson* (No. 1282). Ad Moosmai, *Griffith*?

Species, ut videtur, a *S. subsecundo* diversa, sed, ob descriptiones imperfectas, vix determinari potest.

# ADDENDA ET CORRIGENDA.

P. 5, *pro* ORTHOTRICHUM *in* BRYACEÆ *lege* ORTHODONTIUM.
„ „ MIELICHOFERIA *l.* MIELICHHOFERIA.
„ „ CHARTOMITRIUM *l.* CHÆTOMITRIUM.
6 „ CYATHOPTERYGIUM *l.* CYATHOPHORUM.
9, *inter* L. DIVARICATUM *et* L. GRIFFITHII *insere*—

L. SPIRALE (*Mitten*). Dioicum, *L. crispo* persimile, foliis perichætialibus e basi subquadrata vaginante cellulis omnibus elongatis angustis areolata subulatis, theca in pedunculo sicco recto humido superne spiraliter flexuoso forma et plicatione et operculo etiam peristomio *L. crispi*.

*Hab.* In Himalayæ orient. reg. temp., *J. D. Hooker*; inter cæspitem *L. tortilis* plantulas paucas carpsi.

*L. crispo* (Dicranum, *Hedw.*) primo visu statu exsiccato omnino simile; foliis perichætialibus autem basi latiore paululum superne dilatatis cellulis omnibus angustis non laxis prosenchymaticis et pedunculi flexura diversum.

P. 38, *pro* D. LIMBATUS *l.* D. SUBLIMBATUS.
„ *post* D. JAVANICUS (Barbula, *l. Dzy. et Molk.*
63, *P. seriata* inter species Indicas sedem nullam habet, et descriptio ejus pro parte observationis præcedentis legenda est.
89, *pro* M. HOOKERI *l.* M. SPARSUM.
101, *in descriptione thecæ* S. TUBERCULATI, *pro* subtuberculatove *lege* subtuberculato.
102, in *Hab. S. brachypelmæ* post nomen "*Wallich*" insere, !
108, in descriptione *S. caliginosi* et in notula ad *S. Schwægricheni*, etiam in descriptione *S. Griffithii*, loco *S. Hookeri* lege *S. rubicundi*.
112, *pro* S. LANYTRICHUS *lege* S. TANYTRICHUS.

# INDEX.


| | Page |
|---|---|
| Acrobryum speciosum, *Doz. & Molk.* | 87 |
| Acroschisma densifolia, *Wils.* | 7 |
| Andreæa, *Ehrh.* | 5, 6 |
| —— ambigua, *Wils.* | 6 |
| —— densifolia, *Mitt.* | 7 |
| —— falcata, *Schimp.* | 6 |
| —— Indica, *Mitt.* | 6 |
| —— petrophila, *Ehrh.* | 6, 7 |
| —— rigida, *Wils.* | 6 |
| Angstræmia euphoroclada, *C. Müll.* | 8 |
| —— exigua, *C. Müll.* | 8 |
| —— heteromalla, *C. Müll.* | 11 |
| —— phascoides, *C. Müll.* | 8 |
| —— virens, *C. Müll.* | 11 |
| Anhymenium polycarpon, *Griff.* | 127 |
| —— polysetum, *Griff.* | 127 |
| Anœctangium, *Hedw.* | 5, 30 |
| —— clarum, *Mitt.* | 31 |
| —— compactum, *Schw.* | 31 |
| —— crassinervium, *Mitt.* | 31 |
| —— Hornschuchianum, *Hoppe* | 31 |
| —— imberbe, *Hook. & Tayl.* | 124 |
| —— Indicum, *Mont.* | 123 |
| —— pusillum, *Mitt.* | 32 |
| —— Roylei, *Mitt.* | 30 |
| —— Schmidii, *C. Müll.* | 32 |
| —— Stracheyanum, *Mitt.* | 31 |
| —— Thomsoni, *Mitt.* | 135 |
| —— tortifolium, *Wils.* | 31 |
| Anomodon, *Hook.* | 6, 126 |
| —— acutifolius, *Mitt.* | 121 |
| —— attenuatus, *Hüb.* | 126 |
| —— devolutus, *Mitt.* | 127 |
| —— fragilis, *Wils.* | 126 |
| —— integerrimus, *Mitt.* | 126 |
| —— obtusifolius, *Wils.* | 126 |
| —— planatus, *Mitt.* | 126 |
| —— tristis, *Cesati* | 126 |
| —— viticulosus, *Hook.* | 126, 127 |
| Antitrichia Brasiliensis, *Hornsch.* | 85 |
| Astomum denticulatum, *C. Müll.* | 7 |
| Atrichum, *Beauv.* | 6, 150 |
| —— flavisetum, *Mitt.* | 150 |
| —— subserratum, *Mitt.* | 150 |
| —— undulatum, *Beauv.* | 150 |
| Barbula, *Hedw.* | 5, 33 |
| Barbula arcuata, *Griff.* | 35 |
| —— albicuspis, *Mitt.* | 35 |
| —— arenaria, *Griff.* | 38 |
| —— asperifolia, *Mitt.* | 34 |
| —— chloronotos, *Brid.* | 38 |
| —— comosa, *Doz. & Molk.* | 35 |
| —— confertifolia, *Mitt.* | 36 |
| —— constricta, *Mitt.* | 33 |
| —— Drummondii, *Br. & Sch.* | 27 |
| —— fallax, *R. Br.* | 33, 36 |
| —— gracilenta, *Mitt.* | 35 |
| —— hastata, *Mitt.* | 34 |
| —— Javanica, *Doz. & Molk.* | 38, 158 |
| —— marginata, *Bruch & Sch.* | 38 |
| —— mucronifolia, *Schw.* | 37 |
| —— nigrescens, *Mitt.* | 36 |
| —— obscura, *Mitt.* | 33 |
| —— ovata, *Mitt.* | 36 |
| —— recurvifolia, *Mitt.* | 34 |
| —— rigida, *Schultz* | 38 |
| —— rufescens, *Mitt.* | 33 |
| —— subpellucida, *Mitt.* | 35 |
| —— tophacea, *Mitt.* | 35 |
| —— trifaria, *Mitt.* | 36 |
| —— vinealis, *Brid.* | 33 |
| Bartramia, *Hedw.* | 5, 58 |
| —— angustata, *Wils.* | 61, 62 |
| —— calcarea, *Br. & Sch.* | 63 |
| —— crassinervis, *Wils.* | 63 |
| —— dicranacea, *C. Müll.* | 64 |
| —— dicranoidea, *Wils.* | 64 |
| —— falcata, *Hook.* | 62 |
| —— filiformis, *Hedw.* | 61 |
| —— fontana, *Griff.* | 62 |
| —— glomerata, *Wils.* | 60 |
| —— gonioclada, *Wils.* | 62 |
| —— Griffithiana, *Wils.* | 59, 61 |
| —— Halleriana, *Hedw.* | 58 |
| —— Hookeri, *Wils.* | 64 |
| —— ithyphylla, *Brid.* | 59 |
| —— laxissima, *C. Müll.* | 61 |
| —— leptodonta, *Wils.* | 58 |
| —— mollis, *Doz. & Molk.* | 60 |
| —— nitida, *Wils.* | 62 |
| —— pomiformis, *Hedw.* | 58 |
| —— prætenuis, *Wils.* | 61 |

| | Page |
|---|---|
| Bartramia pseudofontana, *C. Müll.* | 62 |
| —— speciosa, *Griff.* | 64 |
| —— subpellucida, *Mitt.* | 59 |
| —— subulata, *Br. & Sch.* | 58 |
| —— subulosa, *Griff.* | 61 |
| —— tenella, *Wils.* | 62 |
| —— Turneriana, *Schw.* | 62 |
| —— uncinata, *Wils.* | 63 |
| Brachymenium acuminatum, *Harv.* | 68 |
| —— bryoides, *Hook.* | 68 |
| —— cuspidatum, *Griff.* | 68 |
| —— filiforme, *Griff.* | 67 |
| —— filiforme, *Wils.* | 67 |
| —— Nepalense, *Hook.* | 73 |
| —— splachnoides, *Harv.* | 72 |
| —— Weisia, *Hook.* | 68 |
| Brachysteleum Indicum, *C. Müll.* | 46 |
| Breutelia, *Schimp.* | 5, 64 |
| —— deflexa, *Wils.* | 64 |
| —— dicranacea, *Mitt.* | 64 |
| —— Indica, *Mitt.* | 64 |
| Bryum, *Dill.* | 5, 67 |
| —— acuminatum, *Wils.* | 66, 73 |
| —— albicans, *Wahl.* | 66 |
| —— albulum, *Mitt.* | 69 |
| —— alpinum, *L.* | 70, 73 |
| —— apalodictyoides, *C. Müll.* | 74 |
| —— apiculatum, *Schw.* | 70 |
| —— appressum, *Wils.* | 73 |
| —— argenteum, *L.* | 69 |
| —— Auberti, *Mont.* | 75 |
| —— auratum, *Mitt.* | 67 |
| —— brevicaule, *Hempr.* | 73 |
| —— cæspiticium, *L.* | 71, 72 |
| —— calophyllum, *R. Br.* | 71 |
| —— cellulare, *Hook.* | 72 |
| —— cernuum, *Br. & Sch.* | 70, 71, 72 |
| —— clavariæforme, *C. Müll.* | 73 |
| —— cognatum, *Mitt.* | 69 |
| —— Commersonii, *Wils.* | 75 |
| —— contortum, *Griff.* | 73 |
| —— coronatum, *Schw.* | 69 |
| —— coronatum, *Wils.* | 70 |
| —— cuspidatum, *Wils.* | 73 |
| —— delicatulum, *Wils.* | 66 |
| —— densifolium | 74 |
| —— distans, *Wils.* | 73 |
| —— doliolum, *Dub.* | 69 |
| —— elongatum, *Dicks.* | 65 |
| —— erythrinum, *Mitt.* | 70 |
| —— exstans, *Mitt.* | 72 |
| —— extenuatum, *Mitt.* | 68 |
| —— filiforme, *Mitt.* | 67, 68 |
| —— flaccidisetum, *C. Müll.* | 68 |
| —— flaccum, *Wils.* | 72 |
| —— fulvellum, *Wils.* | 69, 71 |
| —— giganteum, *Hook.* | 75 |
| —— hemisphæricarpum, *C. Müll.* | 69 |
| —— Hookeri, *Spr.* | 73 |
| —— inclinatum, *Wils.* | 71 |

| | Page |
|---|---|
| Bryum intermedium, *Wils.* | 71 |
| —— julaceum, *Hook.* | 57 |
| —— lacustre, *Brid.* | 71 |
| —— lamprostegum, *C. Müll.* | 71 |
| —— latifolium, *Br. & Sch.* | 71 |
| —— leptostomoides, *C. Müll.* | 74 |
| —— medianum, *Mitt.* | 74 |
| —— micans, *Mitt.* | 68 |
| —— Montagneanum, *C. Müll.* | 69 |
| —— Nepalense, *Spr.* | 68, 73 |
| —— Nilghiriense, *Mont.* | 75 |
| —— nitens, *Hook.* | 70 |
| —— nitidum, *Mitt.* | 67, 68 |
| —— pachypoma, *Mont.* | 70 |
| —— pachypoma, *Wils.* | 70, 71 |
| —— pachytheca, *C. Müll.* | 69 |
| —— pallens, *Wils.* | 71, 72 |
| —— pallescens, *Wils.* | 71 |
| —— paradoxum, *Schw.* | 74 |
| —— porphyrioneuron, *C. Müll.* | 70 |
| —— prostratum, *C. Müll.* | 67 |
| —— pumilum, *Wils.* | 71, 72 |
| —— ramosum, *Mitt.* | 75 |
| —— recurvatum, *Dicks.* | 27 |
| —— recurvulum, *Mitt.* | 74 |
| —— rigescens, *Wils.* | 65 |
| —— roseum, *Schr.* | 75 |
| —— rubens, *Mitt.* | 69, 70 |
| —— rugosum, *C. Müll.* | 69 |
| —— sanguineum, *Brid.* | 69, 70 |
| —— Schmidii, *C. Müll.* | 68 |
| —— Sollyanum, *Griff.* | 75 |
| —— splachnoides, *Mitt.* | 72 |
| —— strigosum, *Wils.* | 74 |
| —— subrotundum, *Brid.* | 72 |
| —— subrotundum, *Wils.* | 71 |
| —— teretiusculum, *Hook.* | 70 |
| —— Thomsoni, *Mitt.* | 73 |
| —— Tibetanum, *Mitt.* | 72 |
| —— torquescens, *Br. & Sch.* | 74 |
| —— turbinatum, *Hedw.* | 73 |
| —— velutinum, *C. Müll.* | 73 |
| —— viridans, *Wils.* | 71 |
| —— Warneum, *Bland.* | 71 |
| —— Weisia, *C. Müll.* | 36, 68, 70 |
| —— Wightii, *Mitt.* | 74 |
| —— Zollingeri, *Dub.* | 74, 75 |
| Callicostella, *Mitt.* | 6, 136 |
| —— papillata, *Mitt.* | 136 |
| Calymperes, *Swartz* | 5, 41 |
| —— Dozyanum, *Mitt.* | 42 |
| —— fasciculatum, *Doz. & Molk.* | 41 |
| —— Gardneri, *Hook.* | 40 |
| —— lonchophyllum, *Schw.* | 41 |
| —— Moluccense, *Schw.* | 41 |
| —— Moluccense, *Doz. & Molk.* | 42 |
| —— Mülleri, *Mitt.* | 42 |
| —— repens, *Mitt.* | 41 |
| —— semiliberum, *Mitt.* | 41 |
| —— serratum, *A. Braun* | 41 |

Page

Calymperidium Mülleri, *Doz.& Molk.* 42
Campylodontium striatum, *D. & M.* 93
Campylopus compactus, *Wils.* . . 17
—— crassinervis, *Wils.* . . . . 16
—— fragilis, *Br. & Sch.* . . . . 16
—— longipilus, *Wils.* . . . . 20
—— tenuis, *Wils.* . . . . . 8
Catharinea flaviseta, *Wils.* . . . 150
Ceratodon purpureus, *Wils.* . . 35
—— stenocarpus, *Wils.* . . . . 35
Chætomitrium, *Doz. & Molk.* . 5, 115
—— elongatum, *Doz. & Molk.* . . 115
—— volutum, *Mitt.* . . . . . 115
Cinclidotus, *Beauv.* . . . . 5, 42
—— fontinaloides, *Beauv.* . . . 42
Cleistostoma, *Brid.* . . . . 6, 125
—— ambigua, *Mitt.* . . . . . 125
Cryphæa, *Brid.* . . . . . 6, 124
—— concavifolia, *Mitt.* . . . . 125
—— ferruginea, *Mitt.* . . . . 125
—— Gardneri, *Mitt.* . . . . . 125
—— Indica, *Mitt.* . . . . . 125
—— julacea, *Mitt.* . . . . . 125
—— rufescens, *C. Müll.* . . . . 125
—— sphærocarpa, *Mitt.* . . . . 125
Cyathophorum, *Brid.* . . . . 6, 146
—— Adiantum, *Mitt.* . . 147, 148
—— Griffithii, *Wils.* . . . . . 147
—— Hookerianum, *Mitt.* . . . 148
—— intermedium, *Mitt.* . . . . 148
—— marginatum, *Wils.* . . . 147
Cylindrothecium rubicundum, *Wils.* 108
—— Montagnei, *Sch.* . . 108, 109
Daltonia, *Hook.* . . . . . 6, 145
—— apiculata, *Mitt.* . . . . . 145
—— brevipedunculata, *Mitt.* . . 146
—— flexifolia, *Mitt.* . . . . . 146
—— marginata, *Griff.* . . 145, 146
—— scaberula, *Mitt.* . . . . . 146
—— semitorta, *Mitt.* . . . . . 146
—— splachnoides, *Hk. & Tayl.* 146, 147
—— strictifolia, *Mitt.* . . . . 146
Desmatodon, *Brid.* . . . . . 5, 36
—— cernuus, *Hüb.* . . . . . 37
—— chloronotos, *Mitt.* . . . . . 38
—— inermis, *Mitt.* . . . . . 37
—— involutus, *Mitt.* . . . . . 39
—— Javanicus, *Mitt.* . . . . . 38
—— latifolius, *Brid.* . . . . . 37
—— Laureri, *Br. & Sch.* . . . . 37
—— limbatus, *Mitt.* . . . . 38, 158
—— longirostris, *Mitt.* . . . . . 37
—— marginatus, *Mitt.* . . . . . 38
—— mucronifolius, *Mitt.* . . . . 37
—— recurvus, *Mitt.* . . . . . 37
—— rigidus, *Mitt.* . . . . . 38
—— serrulatus, *Mitt.* . . . . . 38
—— spathulatus, *Mitt.* . . . . . 39
—— sublimbatus, *Mitt.* . . . . . 158
—— Wallichii, *Mitt.* . . . . . 38

Page

Dicranodontium asperulum, *Wils.* 21, 22
—— attenuatum, *Wils.* . . . . . 22
Dicranum, *Hedw.* . . . . . 5, 14
—— albescens, *C. Müll.* . . . . . 16
—— asperulum, *Mitt.* . . . . . 22
—— assimile, *Hampe* . . . . . 15
—— attenuatum, *Mitt.* . . . . . 22
—— Bergeri, *Bland.* . . . . . 16
—— Billardieri, *Wils.* . . . . . 14
—— brevisetum, *Doz. & Molk.* . . 15
—— cæspitosum, *Mitt.* . . . . . 22
—— caudatum, *C. Müll.* . . . . 18
—— cerviculatum, *Wils.* . . . 9, 16
—— circinatum, *Wils.* . . . . . 21
—— clavatum, *R. Br.* . . . . . 20
—— comosum, *Schw.* . . . . . 18
—— crispum, *Hedw.* . . . . . 158
—— cuspidatum, *Griff.* . . . . . 15
—— decipiens, *Mitt.* . . . . . 16
—— densum, *Schl.* . . . . . 16, 18
—— dicticyon, *Mitt.* . . . . . 21
—— didymodon, *Griff.* . . . . . 21
—— Dozyanum, *C. Müll.* . . . 19, 20
—— edentulum, *Mitt.* . . . . . 14
—— enerve, *Thed.* . . . . . 16
—— ericetorum, *Mitt.* . . . . . 20
—— ericoides, *Griff.* . . . . . 18
—— erythrognaphalon, *C. Müll.* . . 21
—— exasperatum, *Griff.* . . . . 19
—— flagelliferum, *C. Müll.* . . . 18
—— fragile, *Hook.* . . . . . 15
—— Goughii, *Mitt.* . . . . . 17
—— gracile, *Mitt.* . . . . . 17
—— gracilescens, *Web. & Mohr* . 23
—— gymnostomum, *Mitt.* . . 14, 15
—— Himalayanum, *Mitt.* . . . . 14
—— involutum, *C. Müll.* . . . . 18
—— Khasianum, *Griff.* . . . . . 8
—— lætum, *Mitt.* . . . . . 19
—— latinerve, *Mitt.* . . . . . 17
—— longifolium, *Ehrh.* . . . . . 22
—— lorifolium, *Mitt.* . . . . . 15
—— lubricum, *Wils.* . . . . . 16
—— macrocalyx, *A. Br.* . . . . 14
—— nigrescens, *Mitt.* . . . . 19, 20
—— Nilghiriense, *Mitt.* . . . . 16, 17
—— nitidum . . . . . 17
—— nivale, *C. Müll.* . . . . . 16
—— nodiflorum, *C. Müll.* . . . . 21
—— pallidum, *W. & Mohr* . . . 15
—— palustre, *Brid.* . . . . . 15
—— patulum, *Wils.* . . . . . 11
—— Perrottetii, *Mont.* . . . . . 16
—— phascoides, *Hook.* . . . . . 8
—— piliferum, *Turn.* . . . . . 20
—— pinetorum, *Griff.* . . . . . 17
—— polycarpum, *Wils.* . . . . . 23
—— pyriforme, *Schultz* . . 17, 18
—— recurvum, *Mitt.* . . . . . 20
—— reduncum, *Hornsch.* . . . . 18

Page

Dicranum reflexifolium, *C. Müll.* . 15
—— relaxum, *Wils.* . . . . . 21
—— rugulosum, *Wils.* . . . . . 14
—— scariosum, *Wils.* . . . . . 14
—— Schmidii, *C. Müll.* . . . . . 21
—— scoparium, *Hedw.* . . . 14, 15
—— sericeum, *Wils.* . . . . . 17
—— sordidum, *Wils.* . . . . . 18
—— strumiferum, *Wils.* . . . . 11
—— subluteum, *Mitt.* . . . . . 19
—— subulatum, *Wils.* . . . . . 9
—— Thwaitesii, *Mitt.* . . . . . 19
—— tricolor, *C. Müll.* . . . . . 21
—— turfaceum, *C. Müll.* . . . . 17
—— uncinatum, *Harv.* . . . 18, 21
—— Walkeri, *Mitt.* . . . . . 18
Didymodon, *Hook.* . . . . . 5, 22
—— cirrhifolius, *Harv.* . . . . . 10
—— crenulatus, *Mitt.* . . . . . 23
—— dentatus, *Mitt.* . . . . . 23
—— denticulatus, *Mitt.* . . . . . 24
—— dicranoides, *Griff.* . . . . . 21
—— duriusculus, *Wils.* . . . . . 28
—— flexifolius, *Hook. & Tayl.* . 23
—— fragilis, *Hook. & Wils.* . . 27
—— gracilescens, *Mitt.* . . . . . 23
—— laxifolius, *Mitt.* . . . . . 23
—— longifolius, *Griff.* . . . . . 28
—— perichætialis, *Griff.* . . . . 24
—— purpureus, *Hook. & Tayl.* . 24
—— squarrosus, *Hook.* . . . . . 23
—— stenocarpus, *Mitt.* . . . . . 24
—— Tortula, *Harv.* . . . . . 46
—— vaginatus, *Hook.* . . . . . 12
Diphyscium, *Mohr* . . . . 6, 149
—— fasciculatum, *Mitt.* . . 149, 150
—— involutum, *Mitt.* . . . . . 149
—— longifolium, *Griff.* . 149, 150
—— mucronifolium, *Mitt.* . . . 149
Dissodon Jacquemontii, *Sch.* . . 57
Distichium capillaceum, *Br. & Sch.* 10
—— inclinatum, *Br. & Sch.* . . 10
Drummondia, *Hook.* . . . . . 5, 46
—— brevifolia, *Wils.* . . . . . 47
—— clavellata, *Hook.* . . . . . 47
—— Thomsoni, *Mitt.* . . . . . 46
Encalypta, *Schreb.* . . . . . 5, 42
—— ciliata, *Hedw.* . . . . . 42
—— commutata, *Nees & Hsch.* . 42
—— rhabdocarpa, *Schw.* . . . . 42
—— Thibetana, *Mitt.* . . . . . 42
—— vulgaris, *Hedw.* . . . . . 42
Entosthodon, *Schw.* . . . . . 5, 54
—— Buseanus, *Doz. & Molk.* 54, 145
—— diversinervis, *C. Müll.* . . 55
—— ericetorum, *C. Müll.* . . . 56
—— fascicularis, *C. Müll.* . . . 55
—— flavescens, *Wils.* . . . . . 54
—— nutans, *Mitt.* . . . . . 55
—— Perrottetii, *Mitt.* . . . . . 55

Page

Entosthodon physcomitrioides, *Müll.* 55
—— pilifer, *Mitt.* . . . . . 55
—— Rottleri, *C. Müll.* . . . . . 55
—— submarginatus, *C. Müll.* . . 55
—— Templetoni, *Schw.* . . . . . 55
—— Wallichii, *Mitt.* . . . . . 55
Esenbeckia plicata, *Nees* . . . . 84
Fabronia, *Raddi* . . . . . 5, 75
—— Goughii, *Mitt.* . . . . . 75
—— minuta, *Mitt.* . . . . . 76
—— octoblepharoides, *Schw.* . . 76
—— pusilla, *Raddi* . . . . . 76
—— Schmidii, *C. Müll.* . . . . . 76
—— secunda, *Mont.* . . . . . 75, 76
—— striata, *C. Müll.* . . . . . 93
Fissidens, *Hedw.* . . . . . 6, 136
—— acutifolius, *Mitt.* . . . . . 137
—— adiantoides, *Hedw.* . . . . . 141
—— anomalus, *Mont.* . . . 137, 140
—— areolatus, *Griff.* . . . . . 138
—— biformis, *Mitt.* . . . . . 141
—— bryoides, *Griff.* . . . . 140, 141
—— Ceylonensis, *Doz. & Molk.* . 141
—— circinalis, *Mitt.* . . . . . 138
—— crenulatus, *Mitt.* . . . . . 141
—— cristatus, *Wils.* . . . . . 137
—— cryptotheca, *Doz. & Molk.* . 137
—— debilis, *Wils.* . . . . . 139
—— discolor, *Wils.* . . . . . 139
—— diversifolius, *Mitt.* . . . . . 140
—— elegans, *Brid.* . . . . . 140
—— elongatus, *Mitt.* . . . . . 139
—— exilis, *Hedw.* . . . . . 141
—— falcatus, *Wils.* . . . . . 138
—— filicinus, *Doz. & Molk.* . . 137
—— firmus, *Mitt.* . . . . . 138, 139
—— grandifrons, *Brid.* . . . . . 138
—— incurvus, *Wils.* . . . . . 141
—— involutus, *Wils.* . . . . . 138
—— Japonicus . . . . . 137
—— Javanicus, *Doz. & Molk.* . . 138
—— jungermannioides, *Griff.* 139, 140
—— laxifolius, *Griff.* . . . . . 137
—— longisetus, *Griff.* . . . . . 141
—— neckeroides, *Griff.* . . . . . 137
—— nobilis, *Griff.* . . . . . 137
—— obscurus, *Mitt.* . . . . . 139
—— obtusifolius, *Wils.* . . . . . 140
—— pallidus, *Hook. & Wils.* . . 138
—— perpusillus, *Wils.* . . . . . 141
—— polypodioides, *Wils.* . . . . 138
—— pulchellus, *Mitt.* . . . . . 140
—— Schmidii, *C. Müll.* . . . . . 141
—— serratus, *C. Müll.* . . . . . 140
—— sylvaticus, *Griff.* . . . . . 138
—— taxifolius, *Hedw.* . . . . . 137
—— viridulus, *Wahl.* . . . . . 141
—— viridulus, *Wils.* . . . . . 141
Funaria, *Schreb.* . . . . . 5, 56
—— calvescens, *Schw.* . . . . . 56

| | Page |
|---|---|
| Funaria connivens, *C. Müll.* | 56 |
| —— hygrometrica, *Dill.* | 56 |
| —— leptopoda, *Griff.* | 56 |
| —— microstoma, *Br. & Sch.* | 56 |
| —— Muhlenbergi, *Schw.* | 56 |
| —— Nepalensis, *C. Müll.* | 56 |
| —— orthocarpa, *Mitt.* | 56 |
| —— physcomitrioides, *Mont.* | 55 |
| Garckea, *C. Müll.* | 5, 8 |
| —— phascoides, *C. Müll.* | 8 |
| Glyphocarpus Roylei, *Hook. f.* | 59 |
| Glyphomitrium, *Brid.* | 5, 46 |
| —— Indicum, *Mitt.* | 46 |
| —— Tortula, *Mitt.* | 46 |
| Grimmia, *Ehrh.* | 5, 43 |
| —— affinis, *Hornsch.* | 44 |
| —— anodon, *Br. & Sch.* | 43 |
| —— apocarpa, *Hedw.* | 43 |
| —— canescens, *Mitt.* | 45 |
| —— commutata, *Hübn.* | 44 |
| —— commutata, *Wils.* | 45 |
| —— elatior, *R. Br.* | 45 |
| —— elongata, *Kaulf.* | 43, 46 |
| —— fascicularis, *C. Müll.* | 45 |
| —— flaccida, *Royle* | 23 |
| —— flexuosa, *Griff.* | 8 |
| —— funalis, *Wils.* | 43, 46 |
| —— fuscescens, *Mitt.* | 44 |
| —— Himalayana, *Mitt.* | 45 |
| —— incana, *Wils.* | 44 |
| —— inflectens, *Mitt.* | 43 |
| —— Khasiana, *Mitt.* | 45 |
| —— lanuginosa, *Mitt.* | 45 |
| —— leucophæa, *Grev.* | 43 |
| —— lurida, *Wils.* | 44 |
| —— macrotheca, *Mitt.* | 44 |
| —— microcarpa, *C. Müll.* | 45 |
| —— Nepalensis, *Mitt.* | 46 |
| —— Nilghiriensis, *C. Müll.* | 44 |
| —— oblonga, *Wils.* | 44 |
| —— orientalis, *Wils.* | 46 |
| —— ovata, *Web. & Mohr* | 44 |
| —— redunca, *Mitt.* | 43 |
| —— remota, *Wils.* | 33 |
| —— Schultzii, *Mitt.* | 46 |
| —— stricta, *Turn.* | 43 |
| —— strictifolia, *Mitt.* | 44 |
| —— subfusca, *Wils.* | 43 |
| —— subsecunda, *Mitt.* | 45 |
| —— Tergestina, *Tommas.* | 43 |
| —— uncinata, *Kaulf.* | 43 |
| Gymnostomum, *Hedw.* | 32 |
| —— atroviride, *Griff.* | 32 |
| —— calcareum, *Hornsch.* | 32 |
| —— curvirostrum, *Hedw.* | 32 |
| —— involutum, *Hook.* | 39 |
| —— longirostre, *Griff.* | 37 |
| —— pulchellum, *Griff.* | 54 |
| —— recurvum, *Griff.* | 33, 37 |
| —— repandum, *Griff.* | 54 |
| Gymnostomum rufescens, *Hook.* | 33 |
| —— spathulatum, *Harv.* | 39 |
| —— vernicosum, *Hook.* | 33 |
| —— xanthocarpum, *Hook.* | 32 |
| —— xanthocarpum, *Wils.* | 32 |
| Hedwigia, *Ehrh.* | 6, 123 |
| —— attenuata, *Mitt.* | 123 |
| —— ciliata, *Ehrh.* | 124 |
| —— imberbis, *Spence* | 124 |
| —— Indica, *Mitt.* | 123 |
| —— secunda, *Hook.* | 124 |
| Helicodontium Fabronia, *Schw.* | 99 |
| Heterocladium, *Schimp.* | 6, 135 |
| —— dimorphum, *Sch.* | 136 |
| —— heteropterum, *Sch.* | 136 |
| —— subintegrum, *Mitt.* | 135 |
| Holomitrium, *Brid.* | 5, 24 |
| —— alpinum, *Mitt.* | 25 |
| —— crispulum, *Mitt.* | 24, 25 |
| —— Griffithianum, *Mitt.* | 24 |
| —— Indicum, *Mitt.* | 24 |
| Hookeria, *Smith* | 5, 116 |
| —— acutifolia, *Hook.* | 116 |
| —— flabellata, *Smith* | 118 |
| —— Grevilleana, *Griff.* | 116 |
| —— leptopoma, *Schw.* | 114 |
| —— leskeoides, *Hook.* | 77 |
| —— obovata, *Griff.* | 144 |
| —— obtusifolia, *Harv.* | 117 |
| —— papillata, *Mont.* | 135 |
| —— pulchella, *Griff.* | 145 |
| Hymenostomum encalyptoides, *Griff.* | 42 |
| Hymenostylium, *Brid.* | 5, 32 |
| —— aurantiacum, *Mitt.* | 32 |
| —— calcareum, *Mitt.* | 33 |
| —— commutatum, *Mitt.* | 32 |
| —— curvirostrum, *Mitt.* | 32 |
| —— inconspicuum, *Griff.* | 33 |
| —— longirostre, *Griff.* | 37 |
| —— vernicosum, *Mitt.* | 33 |
| —— xanthocarpum, *Brid.* | 32 |
| Hypnum, *Dill.* | 5, 76 |
| —— albescens, *Schw.* | 104 |
| —— alopecuroides, *Hook.* | 123 |
| —— ambiguum, *Harv.* | 99 |
| —— amblyostegum, *Wils.* | 98 |
| —— argentatum, *Mitt.* | 77 |
| —— auronitens, *Wils.* | 90, 91, 129 |
| —— barbatum, *Wils.* | 112 |
| —— blepharophyllum, *C. Müll.* | 133 |
| —— Bonplandii, *Mitt.* | 77 |
| —— Braunii, *C. Müll.* | 106 |
| —— Buchanani, *Hook.* | 78 |
| —— Buitenzorgii, *Bél.* | 99 |
| —— cameratum, *Mitt.* | 78 |
| —— campestre, *Br. & Sch.* | 79, 83 |
| —— cirrhosum, *Schw.* | 78 |
| —— clarescens, *Wils.* | 100 |
| —— commutatum, *Hedw.* | 83 |
| —— confertum, *Brid.* | 84 |

| | Page |
|---|---|
| Hypnum confertum, *Griff.* | 111 |
| —— contortulum, *Wils.* | 134 |
| —— cordatum, *Harv.* | 80, 88 |
| —— creperum, *Wils.* | 98 |
| —— crista-Castrense, *L.* | 96 |
| —— curvulum, *Hook.* | 96 |
| —— curvulum, *Wils.* | 96 |
| —— cuspidiferum, *Mitt.* | 78 |
| —— cymbifolium, *Doz. & Molk.* | 133 |
| —— cyperoides, *Hook.* | 99, 100 |
| —— declinatum, *Wils.* | 129 |
| —— decorum, *Mitt.* | 77 |
| —— decurvans, *Mitt.* | 78 |
| —— deplanatum, *Sch.* | 105 |
| —— discriminatum, *Mont.* | 113 |
| —— Donianum, *Smith* | 104 |
| —— dumosum, *Mitt.* | 80 |
| —— extenuatum, *Wils.* | 112 |
| —— Fabronia, *Hook.* | 99 |
| —— filicinum, *Hedw.* | 83 |
| —— fluviatile, *Swartz* | 83 |
| —— fulvum, *Mitt.* | 77 |
| —— Gedeanum, *C. Müll.* | 106 |
| —— glareosum, *Wils.* | 79 |
| —— glaucocarpum, *Reinw.* | 115 |
| —— haplohymenium, *Harv.* | 135 |
| —— herbaceum, *Mitt.* | 81 |
| —— hians, *Hedw.* | 80 |
| —— humile, *Harv.* | 102 |
| —— humillimum, *Mitt.* | 80 |
| —— ichnotocladum, *C. Müll.* | 99 |
| —— imponens, *Hedw.* | 96 |
| —— incompletum, *Mitt.* | 77 |
| —— inflexum, *Harv.* | 92 |
| —— irriguum | 83 |
| —— Kamounense, *Harv.* | 79 |
| —— læviusculum, *Mitt.* | 76 |
| —— lepidum, *Wils.* | 98 |
| —— leptocarpum, *Schw.* | 102 |
| —— leptorhynchoides, *Mont.* | 103 |
| —— ligulatum, *C. Müll.* | 82 |
| —— longicuspidatum, *Mitt.* | 77 |
| —— macilentum, *Wils.* | 110 |
| —— macrocarpum, *Hornsch.* | 113, 114 |
| —— malacobolum, *C. Müll.* | 100 |
| —— Megapolitanum, *Wils.* | 81, 82 |
| —— micans, *Wils.* | 114 |
| —— microcarpum, *Hook.* | 102 |
| —— microphyllum, *Wils.* | 130 |
| —— minusculum, *Wils.* | 134 |
| —— Molkenboerianum, *Wils.* | 96 |
| —— molluscum, *Hedw.* | 115 |
| —— myosuroides, *L.* | 80 |
| —— Nepalense, *Hook.* | 100 |
| —— nervosum, *Hook.* | 132 |
| —— nictans, *Wils.* | 98, 104 |
| —— obtusulum, *Mitt.* | 82 |
| —— œdistegum, *C. Müll.* | 79 |
| —— orbiculatum, *Mitt.* | 84 |
| —— orthothecium, *Schw.* | 101 |
| Hypnum papillatum, *Harv.* | 113 |
| —— paraphysale, *C. Müll.* | 113 |
| —— planiusculum, *Mitt.* | 81 |
| —— plumosum, *Swartz* | 79 |
| —— plumulosum, *Doz. & Molk.* | 133 |
| —— polymorphum, *Hook. & Tayl.* | 115 |
| —— prælongum, *Brid.* | 80 |
| —— præmolle, *C. Müll.* | 106 |
| —— prionophyllum, *C. Müll.* | 132 |
| —— pristocalyx, *C. Müll.* | 133 |
| —— procumbens, *Mitt.* | 79 |
| —— propinquum, *Harv.* | 96 |
| —— pseudostriatum, *C. Müll.* | 114 |
| —— pterogonioides, *Mitt.* | 77 |
| —— punctulatum, *Harv.* | 101 |
| —— radicale, *Hornsch.* | 83 |
| —— radicale, *Br. & Sch.* | 83 |
| —— recognitum, *Auct.* | 133 |
| —— renidens, *Wils.* | 95 |
| —— retroflexum, *Harv.* | 115 |
| —— riparium, *L.* | 82, 83 |
| —— rivicola, *Mitt.* | 83 |
| —— rotulatum, *Griff.* | 148 |
| —— rusciforme, *Wies.* | 81 |
| —— rutabulum, *L.* | 79 |
| —— salebrosum, *Hoffm.* | 79 |
| —— salebrosum, *Wils.* | 79 |
| —— sarmentosum, *Wils.* | 109 |
| —— saxetorum, *Mitt.* | 84 |
| —— scabrisetum, *Schw.* | 80 |
| —— Schiedeanum, *Wils.* | 134 |
| —— Schmidii, *C. Müll.* | 123 |
| —— Schreberi, *Willd.* | 110 |
| —— scintillans, *Wils.* | 101 |
| —— scoparium, *Wils.* | 132 |
| —— secundum, *Mont.* | 79 |
| —— semitortum, *Mitt.* | 81 |
| —— serpens, *L.* | 82 |
| —— serratum, *Beauv.* | 100 |
| —— Sommerfeltii, *Myrin.* | 115 |
| —— sparsile, *Mitt.* | 82 |
| —— spathulæfolium, *C. Müll* | 118 |
| —— sphærotheca, *Wils.* | 102 |
| —— spiniforme, *L.* | 141 |
| —— splendens, *Hedw.* | 97 |
| —— stellatum, *Wils.* | 88 |
| —— stissophyllum, *Hampe* | 101 |
| —— Stokesii, *Turn.* | 80 |
| —— subhumile, *C. Müll.* | 102 |
| —— Sullivantii, *Wils.* | 80 |
| —— Swartzii, *Wils.* | 80 |
| —— tamariscella, *C. Müll.* | 134 |
| —— tamariscinum, *Wils.* | 133, 134 |
| —— tanytrichum, *Doz. & Molk.* | 112 |
| —— Tavoyense, *Hook.* | 82 |
| —— tenuissimum, *Mitt.* | 83 |
| —— Tibetanum, *Mitt.* | 83 |
| —— turgidum, *Doz. & Molk.* | 106 |
| —— umbratum, *Wils.* | 113 |
| —— uncinatum, *Hedw.* | 83 |

| | Page |
|---|---|
| Hypnum vagans, *Harv.* | 81 |
| —— varium, *Hook. & Wils.* | 83 |
| —— venustum, *Reinw. & Nees* | 114 |
| —— vesiculare, *Wils.* | 101 |
| —— Wallichii, *Hook.* | 132 |
| —— Wightii, *Mitt.* | 82 |
| —— Zippelii, *Doz. & Molk.* | 84 |
| Hypopterygium, *Brid.* | 6, 148 |
| —— Ceylanicum, *Mitt.* | 148 |
| —— flavo-limbatum, *C. Müll.* | 148 |
| —— rotulatum, *Wils.* | 148, 149 |
| —— struthiopteris, *Brid.* | 149 |
| —— tenellum, *C. Müll.* | 148 |
| —— Tibetanum, *Mitt.* | 148 |
| Isothecium Nilghiriense, *Mont.* | 77 |
| Lasia Californica | 124 |
| —— Indica, *Wils.* | 124 |
| —— trichomitria, *Brid.* | 124 |
| Lepidopilum, *Brid.* | 5, 116 |
| —— purpuratum, *Mitt.* | 116 |
| —— secundum, *Mitt.* | 116 |
| —— Thwaitesianum, *Mitt.* | 116 |
| —— Uticamundianum, *Mont.* | 116 |
| Leptohymenium tenue, *Schw.* | 113, 114 |
| Leptotrichum, *Hampe* | 5, 8 |
| —— amplexans, *Mitt.* | 9 |
| —— capillaceum, *Mitt.* | 10 |
| —— cervículatum, *Mitt.* | 9 |
| —— crispum, *Mitt.* | 158 |
| —— divaricatum, *Mitt.* | 9, 10 |
| —— euphoroclada, *Mitt.* | 8 |
| —— Griffithii, *Mitt.* | 9 |
| —— heteromallum, *Mitt.* | 11 |
| —— Himalayanum, *Mitt.* | 12 |
| —— inclinatum, *Mitt.* | 10 |
| —— Khasianum, *Mitt.* | 8, 9 |
| —— laxissimum, *Mitt.* | 10 |
| —— Miquelianum, *Mitt.* | 11 |
| —— molliculum, *Mitt.* | 11 |
| —— patulum, *Mitt.* | 11 |
| —— phascoides, *Mitt.* | 8 |
| —— plicatum, *C. Müll.* | 10 |
| —— pomiforme, *Mitt.* | 8, 61 |
| —— Reinwardti, *Mitt.* | 12 |
| —— Schmidii, *C. Müll.* | 11 |
| —— setiferum, *Mitt.* | 11 |
| —— spirale, *Mitt.* | 158 |
| —— squarrosum, *Mitt.* | 11 |
| —— tortile, *Hampe* | 9 |
| —— tortipes, *Mitt.* | 10 |
| —— virens, *Mitt.* | 11 |
| —— Wahlenbergii, *Mitt.* | 12 |
| Lescurea marginata, *Wils.* | 111 |
| Leskea, *Hedw.* | 6, 129 |
| —— assimilis, *Mitt.* | 138 |
| —— aurea, *Harv.* | 93 |
| —— aurea, *Wils.* | 94 |
| —— blepharophylla, *Mitt.* | 133 |
| —— Bonplandii, *Hook.* | 77 |
| —— capillata, *Mitt.* | 130, 131, 132 |
| Leskea catenulata | 130 |
| —— consanguinea, *Mitt.* | 131 |
| —— contortula, *Mitt.* | 134, 135 |
| —— curvirostra, *Harv.* | 102 |
| —— cymbifolia, *Mitt.* | 133, 134 |
| —— delicatula, *Mitt.* | 133 |
| —— flexilis, *Hedw.* | 109 |
| —— flexilis, *Hook.* | 129 |
| —— fulva, *Harv.* | 77 |
| —— glaucina, *Mitt.* | 133 |
| —— grata | 134 |
| —— haplohymenium, *Mitt.* | 135 |
| —— Hookeri, *Mitt.* | 132 |
| —— incompleta, *Griff.* | 77 |
| —— incurvata, *Hedw.* | 130 |
| —— investis, *Mitt.* | 135 |
| —— lævifolia, *Mitt.* | 130 |
| —— leptoclada, *Tayl.* | 135 |
| —— longirostris, *Schw.* | 77 |
| —— microphylla, *Swartz* | 130 |
| —— minuscula, *Mitt.* | 134 |
| —— mollis, *Hedw.* | 109 |
| —— muricola, *Mitt.* | 130, 131 |
| —— obscuriuscula, *Mitt.* | 130 |
| —— paleacea, *Wils.* | 103 |
| —— pellucinervis, *Mitt.* | 130 |
| —— plumosa, *Mitt.* | 133 |
| —— polyantha, *Harv.* | 99 |
| —— prionophylla, *Mitt.* | 132 |
| —— pristocalyx, *Mitt.* | 133 |
| —— pterogonioides, *Hook.* | 77 |
| —— ramuligera, *Mitt.* | 132 |
| —— remotifolia, *Hook.* | 131, 134, 135 |
| —— rostrata, *Hedw.* | 130 |
| —— Scopula, *Mitt.* | 131 |
| —— secunda, *Hook.* | 101 |
| —— sparsifolia, *Mitt.* | 135 |
| —— stratosa, *Mitt.* | 131 |
| —— subulacea, *Mitt.* | 131 |
| —— tamariscella, *Mitt.* | 134 |
| —— trachypoda, *Mitt.* | 133 |
| —— tristis, *Césati* | 126 |
| —— Wallichii, *Mitt.* | 132 |
| Leucobryum, *Hampe* | 5, 25 |
| —— aduncum, *Doz. & Molk.* | 26 |
| —— angustifolium, *Wils.* | 26 |
| —— Bowringii, *Mitt.* | 26 |
| —— falcatum, *C. Müll.* | 25 |
| —— giganteum, *C. Müll.* | 26 |
| —— Javense, *Mitt.* | 25 |
| —— Nilghiriense, *C. Müll.* | 26 |
| —— vulgare, *Wils.* | 26 |
| —— Wightii, *Mitt.* | 25 |
| Leucodon, *Schw.* | 6, 124 |
| —— sciuroides, *Schw.* | 124 |
| —— secundus, *Mitt.* | 124 |
| —— Thomsoni, *Mitt.* | 124 |
| Leucoloma, *Brid.* | 5, 13 |
| —— amœne-virens, *Mitt.* | 13 |
| —— mollis, *C. Müll.* | 13 |

Page

Leucoloma Sieberi . . . . . 14
—— Taylori, *Mitt.* . . . . . 13
—— tenerum, *Mitt.* . . . . . 13
Leucophanes, *Brid.* . . . . . 25
—— cuspidatus, *C. Müll.* . . . 25
—— Gardnerianus, *C. Müll.* . . 26
—— glaucus, *Mitt.* . . . . . 25
—— octoblepharoides, *Brid.* . . 25
Lyellia, *R. Br.* . . . . . 6, 156
—— bifurcata, *Bél.* . . . . . 156
—— crispa, *Hook.* . . . . . 156
Macromitrium, *Brid.* . . . . . 5, 49
—— angustifolium, *Doz. & Molk.* 53
—— Assamicum, *Mitt.* . . . . 50
—— calycinum, *Mitt.* . . . . . 49
—— calymperoideum, *Mitt.* . . 50
—— Ceylanicum, *Mitt.* . . . . 52
—— cirrhosum, *Brid.* . . . . . 53
—— corrugatum, *Wils.* . . . . 52
—— densum, *Mitt.* . . . . . 51
—— fasciculare, *Mitt.* . . . . 51
—— fulvum, *Mitt.* . . . . . 52, 53
—— goniorhynchum, *Mitt.* . . . 53
—— involutifolium, *Mont.* . . . 51
—— longicaulis, *C. Müll.* . . . 53
—— longifolium, *Wils.* . . . . 52
—— Moorcroftii, *Schw.* . . . . 50
—— Müllerianum, *Mitt.* . . . 51
—— Nepalense, *Schw.* . . . . 50
—— nigricans, *Mitt.* . . . . . 53
—— Nilghiriense, *C. Müll.* . . . 52
—— nitidum, *Hook. & Wils.* . . 52
—— parvulum, *Wils.* . . . . . 49
—— Perrottetii, *C. Müll.* . . . 49
—— pileatum, *Wils.* . . . . . 50
—— Reinwardtii, *Wils.* . . . . 51
—— Schmidii, *C. Müll.* . . . . 51
—— Seemanni, *Mitt.* . . . . . 51
—— spathulare, *Mitt.* . . . . 50
—— squarrulosum, *C. Müll.* . . 49
—— sulcatum, *Brid.* . . . . . 52
—— tersum, *Wils.* . . . . . 52
—— tortuosum, *Wils.* . . . . 50
—— torulosum, *Mitt.* . . . . 53
—— uncinatum, *C. Müll.* . . . 51
—— Wagnerianum, *C. Müll.* . . 51
Meesia, *Hedw.* . . . . . 5, 58
—— uliginosa, *Hedw.* . . . . . 58
Megalostylium brevisetum, *Doz. & M.* 15
Meteorium, *Brid.* . . . . . 5, 84
—— acuminatum, *Mitt.* . . . 85, 86
—— aureum, *Mitt.* . . . . . 89, 90
—— auronitens, *Mitt.* . . . . 90, 91
—— Brasiliense, *Mitt.* . . . . . 85
—— commutatum, *Mitt.* . . . . 89
—— convolvens, *Mitt.* . . . . . 90
—— cordatum, *Mitt.* . . . . . 88
—— crassicaule, *Mitt.* . . . . 84, 85
—— cuspidiferum, *Tayl.* . . . . 128
—— divergens, *Mitt.* . . . . . 87

Page

Meteorium filamentosum, *Mitt.* 90, 91
—— flammeum, *Mitt.* . . . . . 88
—— flexipes, *Mitt.* . . . . . 85
—— floccosum, *Mitt.* . . . . . 90
—— floribundum, *Mitt.* . . . . 90
—— Foulkesianum, *Mitt.* . . . 85
—— frondosum, *Mitt.* . . . . . 86
—— hispidum, *Mitt.* . . . . . 89
—— Hookeri, *Mitt.* . . . 86, 89, 158
—— infuscatum, *Mitt.* . . . . . 91
—— lanosum, *Mitt.* . . . . . 90
—— membranaceum, *Mitt.* . . . 88
—— nitidum, *Mitt.* . . . . . 87
—— orientale, *Mitt.* . . . . . 85
—— phæum, *Mitt.* . . . . . 87
—— plicatum, *Mitt.* . . . . . 84
—— punctulatum, *C. Müll.* . . 91
—— reclinatum, *Mitt.* . . . . . 87
—— retrorsum, *Mitt.* . . . . . 90
—— scabriusculum, *Mitt.* . . . 85
—— Schmidii, *C. Müll.* . . . . 91
—— solutum, *Mitt.* . . . . . 88
—— sparsum, *Mitt.* . . . . . 158
—— speciosum, *Mitt.* . . . . . 87
—— spiculatum, *Mitt.* . . . . . 90
—— squarrosum, *Mitt.* . . . . . 87
—— tumidum, *Mitt.* . . . . . 86
—— Wallichii, *Mitt.* . . . . . 89
—— Wightii, *Mitt.* . . . . . 85
Mielichhoferia, *Hornsch.* . . 5, 65, 158
—— Himalayana, *Mitt.* . . . . 65
—— nitida, *Hornsch.* . . . . . 65
Mniadelphus, *C. Müll.* . . . 6, 144
—— Ceylanicus, *Mitt.* . . . . . 145
—— Griffithii, *Mitt.* . . . 144, 145
—— heterophyllus, *Wils.* . . . 144
—— humifusus, *Wils.* . . . . . 144
—— Montagnei, *C. Müll.* . . . 145
—— obovatus, *Mitt.* . . . . . 144
—— paradoxus, *C. Müll.* . . . 145
—— spathulatus, *C. Müll.* . . . 144
—— succulentus, *Mitt.* . . . . 145
Mnium, *Dill.* . . . . . 6, 141
—— coriaceum, *Griff.* . . . . . 143
—— crispum, *Mitt.* . . . . . 142
—— cuspidatum, *Hedw.* . . . . 144
—— cuspidatum, *Wils.* . . . . . 143
—— dilatatum, *Wils.* . . . . . 143
—— heterophyllum, *Hook.* . . . 143
—— lycopodioides, *Hook.* . . . 142
—— medium, *Br. & Sch.* . . . . 144
—— orthorhynchum, *Brid.* . . . 142
—— punctatum, *Hedw.* . . . . . 144
—— ramosum, *Hook.* . . . . . 75
—— rhynchophorum, *Hook.* . . 143
—— rhynchophorum, *Wils.* . . . 143
—— rostratum, *Schw.* . . . . . 143
—— rostratum, *Wils.* . . . . . 144
—— serratum, *Brid.* . . . . . 142
—— succulentum, *Mitt.* . . . . 143

Page

Mnium trichomanes, *Mitt.* . . . 144
—— trichomitrium, *Mitt.* . . . 142
—— undulatum, *Hedw.* . . . . 143
Neckera, *Hedw.* . . . . . 6, 117
—— acuminata, *Hook.* . . . . 86
—— acuminata, *Wils.* . . . . 86
—— acutata, *Mitt.* . . . . . 121
—— Adiantum, *Griff.* . . . . 147
—— æqualifolia, *C. Müll.* . . . 120
—— Alleghaniensis . . . . . 123
—— alopecuroides, *Mitt.* . . . 123
—— angusta, *C. Müll.* . . . . 110
—— arcuans, *Mitt.* . . . . . 123
—— aurea, *Griff.* . . . . . 89
—— blanda, *Harv.* . . . . . 127
—— breviramea, *C. Müll.* . . . 129
—— brevirostris, *Griff.* . . . . 94
—— breviseta, *Wils.* . . . 122, 123
—— Buchanani, *C. Müll.* . . . 129
—— capillacea, *Griff.* . . . . 94
—— cerina, *Tayl.* . . . . . 128
—— clastobryum, *C. Müll.* . . . 111
—— coarctata, *C. Müll.* . . . . 108
—— comes, *Griff.* . . . . . 109
—— complanata, *Hüb.* . . . . 120
—— crassicaulis, *C. Müll.* . . . 84
—— crenulata, *Harv.* . . . . 123
—— crinita, *Griff.* . . . . . 120
—— crispatula, *Hook.* . . . . 129
—— curvata, *Griff.* . . . . . 109
—— curvirostra, *Schw.* . . . . 97
—— cuspidifera, *Tayl.* . . . . 128
—— dentata, *Griff.* . . . . . 119
—— elegantula, *Griff.* . . . . 120
—— exserta, *Hook.* . . . . . 120
—— fimbriata, *Harv.* . . . . 122
—— fimbriata, *Wils.* . . . . . 121
—— flabellata, *Mitt.* . 118, 119, 120
—— flaccida, *C. Müll.* . . . . 121
—— flavescens, *Hook.* . . . . 108
—— flexuosa, *Harv.* . . . . . 120
—— fruticosa, *Mitt.* . . . . . 122
—— fuscescens, *Hook.* . . . . 128
—— glossophylla, *Mitt.* . . . . 119
—— Goughiana, *Mitt.* . . . . 120
—— Himalayana, *Mitt.* . . . . 121
—— hispida, *C. Müll.* . . . . . 89
—— Hookeriana, *Griff.* . . . . 147
—— Hookeriana, *Mitt.* . . 118, 119
—— Javanica, *C. Müll.* . . 118, 119
—— læta, *Griff.* . . . . . 107
—— lancifolia, *Harv.* . . . . . 110
—— leuconeura, *C. Müll.* . . . 128
—— ligulæfolia, *Mitt.* . . . . 119
—— longirostris, *Hook.* . . . . 122
—— lurida, *Griff.* . . . . . 109
—— macrocarpa, *Brid.* . . . . 122
—— macropelma, *C. Müll.* . . . 123
—— macropoda, *Auct.* . . . . 106
—— mollis, *C. Müll.* . . . . . 88

Page

Neckera Montagneana, *C. Müll.* 118, 119
—— myura, *Wils.* . . . . . 107
—— nitida, *Wils.* . . . . . 107
—— obtusata, *Mitt.* . . . . . 118
—— orientalis, *C. Müll.* . . . . 85
—— Parishiana, *Mitt.* . . . . 121
—— parvula, *Mitt.* . . . . . 123
—— plicæfolia, *C. Müll.* . . . . 129
—— plicata, *C. Müll.* . . . . 106
—— Pluvini, *Mitt.* . . . . . 120
—— procumbens, *C. Müll.* . . . 127
—— pulchella, *Griff.* . . . . . 109
—— rectifolia, *Mitt.* . . . . . 119
—— rigidula, *Mitt.* . . . . . 120
—— rostrata, *Griff.* . . . . . 102
—— rubicunda, *Wils.* . . . . . 108
—— rugulosa, *Mitt.* . . . . . 121
—— scalpellifolia, *Mitt.* . . . . 119
—— Schmidii, *Mitt.* . . . . . 123
—— spathulæfolia, *Mitt.* . . . . 118
—— spectabilis, *Griff.* . . . . 123
—— sphærocarpa, *Hook.* . . . . 125
—— squarrosa, *Hook.* . . . . . 87
—— Stracheyana, *Mitt.* . . . . 118
—— subserrata, *Hook.* . . 122, 123
—— Targioniana, *Mitt.* . . . . 117
—— tenuis, *Hook.* . . . . . 114
—— trichomanoides, *Hartm.* . . 118
—— tumida, *Dicks.* . . . . . 86
—— undulata, *Mont.* . . . . . 121
—— uroclada, *Mitt.* . . . . . 122
—— Wallichii, *Dec.* . . . . . 89
Octoblepharum, *Hedw.* . . . . 5, 25
—— albidum, *Hedw.* . . . . . 25, 26
—— serratum, *Hook.* . . . . . 57
Oligotrichum, *Decand.* . . . . 6, 150
—— Javanicum, *Doz. & Molk.* . 150
Omalia pulchella, *Wils.* . . . 119, 120
—— Targioniana, *Gough* . . . 117
Oreas, *Brid.* . . . . . 5, 58
—— Martiana, *Brid.* . . . . . 58
Orthodon serratus, *Bory* . . . 57
—— subglaber, *Griff.* . . . . . 57
Orthodontium, *Schw.* . . . . . 5, 65
—— infractum, *Doz. & Molk.* . 13, 65
Orthomnion crispum, *Wils.* . . . 142
—— trichomitrium, *Mitt.* . . . 142
Orthotrichum, *Hedw.* . . . . . 5, 48
—— alpestre, *Wils.* . . . . . 48
—— anomalum, *Hedw.* . . . . . 48
—— Assamicum, *Griff.* . . . . . 50
—— bryoides, *Mitt.* . . . . . 142
—— chrysæum, *Br. & Sch.* . . . 93
—— concavifolium, *Griff.* . . . 125
—— crenulatum, *Mitt.* . . . . . 48
—— cupulatum, *Hoffm.* . . . . 48
—— fastigiatum, *Bruch* . . . . 48
—— Hookeri, *Mitt.* . . . . . 48
—— leptocarpum, *Wils.* . . . . 48
—— Moorcroftii, *Griff.* . . . . 50

Page

Orthotrichum obtusifolium, *Schrad.* 48
—— robustum, *Wils.* . . . . . 49
—— rupestre, *Schl.* . . . . . 48
—— Schmidii, *C. Müll.* . . . . . 49
—— speciosum, *Nees* . . . . 48, 49
—— Sprucei, *Mont.* . . . . . 48
—— undulatum, *Hook. & Grev.* . 41
Phascum, *L.* . . . . . 7
—— alternifolium, *Dicks.* . . . . 7
—— bryoides, *Dicks.* . . . . . 7
—— Nepalense, *Brid.* . . . . . 7
—— tenue, *Wils.* . . . . . 7
Philonotis, *Brid.* . . . . . 5, 59
—— angusta, *Mitt.* . . . . . 61
—— calcarea, *Mitt.* . . . . . 63
—— falcata, *Mitt.* . . . . . 62, 63
—— fontana, *Brid.* . . . . . 63
—— glomerata, *Mitt.* . . . . . 60
—— Griffithiana, *Mitt.* . . . . . 59
—— heterophylla, *Mitt.* . . . . . 61
—— imbricatula, *Mitt.* . . . . . 61
—— laxissima, *Mitt.* . . . . . 61
—— leptocarpa, *Mitt.* . . . . . 60
—— longicollis, *Hampe* . . . . . 64
—— lutea, *Mitt.* . . . . . 63
—— macrocarpa, *Mitt.* . . . . . 62
—— mollis, *Mitt.* . . . . . 60
—— Roylei, *Mitt.* . . . . . 59
—— seriata, *Mitt.* . . . . . 63, 158
—— speciosa, *Mitt.* . . . . . 64
—— subulosa, *Mitt.* . . . . . 61
—— tenella, *Mitt.* . . . . . 62
—— Thwaitesii, *Mitt.* . . . . . 60
—— Turneriana, *Mitt.* . . . . 61, 62
Physcomitrium, *Brid.* . . . . 5, 54
—— acuminatum, *Br. & Sch.* . . 54
—— cyathicarpum, *Mitt.* . . . . 54
—— immersum, *Sull.* . . . . . 54
—— nutans, *Wils.* . . . . . 55
—— Perrottetii, *Mont.* . . . . . 55
—— pulchellum, *Mitt.* . . . . . 54
—— repandum, *Mitt.* . . . . . 54
Phyllogonium, *Brid.* . . . . . 5, 115
—— elegans, *Hook. & Wils.* . . 115
Pilotrichum, *Beauv.* . . . . . 84
—— attenuatum, *Wils.* . . . . . 128
—— aurantiacum, *Wils.* . . . . . 89
—— auriculatum, *Wils.* . . . . . 130
—— canescens, *Wils.* . . . . . 89
—— corrugatum, *Wils.* . . . . . 90
—— crassum, *Wils.* . . . . . 86
—— filamentosum, *Wils.* . . . . 91
—— fuscescens, *Wils.* . . . . . 128
—— Griffithianum, *Wils.* . . . . 90
—— nitidum, *Wils.* . . . . . 87
—— phæum, *Wils.* . . . . . 88, 91
—— Pluvini, *Brid.* . . . . . 120
—— reclinatum, *C. Müll.* . . . . 87
—— squarrosum, *Wils.* . . . . . 87
—— tortile, *Wils.* . . . . . 128

Page

Pilotrichum venustum, *Wils.* . . . 114
Plagiothecium neckerioideum, *Sch.* 103
Pleuridium, *Brid.* . . . . . 5, 7
—— alternifolium, *Brid.* . . . . 7
—— denticulatum, *Mitt.* . . . . 7
—— nervosum, *Mitt.* . . . . . 7
—— tenue, *Mitt.* . . . . . 7
Pleuropus densus, *Griff.* . . . . 94
—— fenestratus, *Griff.* . . . . . 77
—— pterogonioides, *Griff.* . . . . 93
Pogonatum, *Brid.* . . . . . 6, 151
—— aloides, *Brid.* . . . . 151, 152
—— alpinum, *Brid.* . . . . . 151
—— cirrhatum, *Wils.* . . . . . 154
—— convolutum, *Brid.* . . . . . 154
—— fastigiatum, *Mitt.* . . . . . 154
—— flexicaule, *Mitt.* . . . . . 152
—— fuscatum, *Mitt.* . . . . . 154
—— gymnophyllum, *Mitt.* . 152, 153
—— hexagonum, *Mitt.* . . . . . 151
—— macrophyllum, *Doz. & Molk.* 154
—— marginatum, *Mitt.* . . . . . 152
—— microstomum, *R. Br.* . . . . 151
—— Neesii, *C. Müll.* . . . . . 151
—— nudiusculum, *Mitt.* . . . . 153
—— patulum, *Harv.* . . . 152, 153
—— proliferum, *Mitt.* . . . . . 152
—— rufisetum, *Mitt.* . . . . . 153
—— seminudum, *Mitt.* . . . . . 152
—— Teysmanni, *Doz. & Molk.* 152, 154
—— urnigerum, *Brid.* . . . 151, 156
Polytrichum, *Dill.* . . . . . 6, 155
—— alpinum, *Wils.* . . . . . 155
—— angustatum, *Griff.* . . . . . 150
—— convolutum, *Wils.* . . . . . 154
—— curvifolium, *Wils.* . . . . . 152
—— densifolium, *Mitt.* . . . . . 155
—— falcifolium, *Griff.* . . . . . 150
—— gracile, *Menz.* . . . . . 156
—— gymnophyllum, *Wils.* . . . . 153
—— juniperinum, *Hedw.* . . . . 156
—— perichætiale, *Mont.* . . . . . 155
—— proliferum, *Griff.* . . . . . 152
—— pungens, *Wils.* . . . . . 155
—— rufisetum, *Wils.* . . . . . 153
—— seminudum, *Wils.* . . . . . 152
—— Thomsoni, *Mitt.* . . . . . 155
—— tortipes, *Wils.* . . . . . 155
—— xanthopilum, *Wils.* . . . . 156
Pterogonium, *Swartz* . . . . . 92
—— ambiguum, *Hook.* . . . . . 125
—— aureum, *Griff.* . . . . . 106
—— aureum, *Hook.* . . . . . 94
—— filiforme . . . . . 93
—— flavescens, *Hook.* . . . . . 93
—— Indicum, *Mont.* . . . . . 125
—— intricatum, *Schw.* . . . . . 93
—— julaceum, *Hook.* . . . . . 92
—— microcarpum, *Harv.* . . . . 116
—— myurum, *Hook.* . . . . . 107

Page
Pterogonium neckerioides, *Griff.* . 76
—— squarrosum, *Griff.* . . . . 92
Pterygophyllum Indicum, *Bél.* . 117
Ptychomitrium speciosum, *Wils.* . 46
Pylacesia brevifolia, *Wils.* . . . 93
—— speciosa, *Wils.* . . . . . 95
—— tenella, *Wils.* . . . . . 94
Rhacopilum, *Brid.* . . . . . 6, 136
—— anomalum, *Schw.* . . . . 136
—— cristatum, *Wils.* . . . . 136
—— Indicum, *Mitt.* . . . . . 136
—— orthocarpum, *Wils.* . . . 136
—— Schmidii, *C. Müll.* . . . . 136
Rhegmatodon, *Brid.* . . . . . 6, 127
—— declinatus, *Brid.* . . . . 127
—— orthostegius, *Mont.* . . . 127
—— polycarpus, *Mitt.* . . . . 127
Rhizogonium, *Brid.* . . . . . 6, 142
—— spiniforme, *Br.* . . . . . 142
Sauloma, *Hook. f. & Wils.* . . 5, 116
—— microcarpa, *Mitt.* . . . . 116
Schistidium apocarpum, *Wils.* . . 34
Schistomitrium, *Doz. & Molk.* . 5, 26
—— Gardnerianum, *Mitt.* . . . 26
Schlotheimia, *Brid.* . . . . . 5, 53
—— goniorhyncha, *Doz. & Molk.* 53
—— Grevilleana, *Mitt.* . . . . 53
—— rugifolia, *Grev.* . . . . . 54
—— sulcata, *Griff.* . . . . . 52
Schœnobryum julaceum, *Doz. & Molk.* 125
Sphagnum, *Dill.* . . . . . 6, 156
—— acutifolium, *Ehrh.* . . . . 156
—— contortum, *Wils.* . . . . 157
—— cuspidatum, *Ehrh.* . . . . 156
—— cymbifolium, *Dill.* . . . . 156
—— fimbriatum, *Wils.* . . . . 156
—— Gedeanum, *Doz. & Molk.* . . 156
—— Javense, *Brid.* . . . . . 25
—— Junghuhnianum, *Doz. & Molk.* 156
—— Khasianum, *Mitt.* . . . . 156
—— obtusifolium, *Griff.* . . . 157
—— subsecundum, *Nees* . . . 157
Splachnum, *L.* . . . . . 5, 58
—— angustatum, *L.* . . . . . 58
—— mnioides, *Hedw.* . . . . . 58
—— urceolatum, *Br. & Sch.* . . 58
Stereodon, *Brid.* . . . . . 5, 92
—— acutirameus, *Mitt.* . . . . 106
—— albescens, *Mitt.* . . . 104, 105
—— amblyostegus, *Mitt.* . . . 97
—— angustifolius, *Mitt.* . . . . 106
—— angustus, *Mitt.* . . . . . 110
—— asper, *Mitt.* . . . . . 110, 111
—— Assamicus, *Mitt.* . . . . . 104
—— aureus, *Mitt.* . . . . . 94, 99
—— brachypelma, *Mitt.* . . . 102, 158
—— Braunii, *Mitt.* . . . . . 106
—— brevirostris, *Mitt.* . . . . . 94
—— Buitenzorgii, *Mitt.* . . . . . 99
—— cæspitosus, *Mitt.* . . . . . 101

Page
Stereodon caliginosus, *Mitt.* . 108, 158
—— camurifolius, *Mitt.* . . . . . 96
—— caperatus, *Mitt.* . . . . . 97
—— capillaceus, *Mitt.* . . . . . 94
—— celatus, *Mitt.* . . . . . 99
—— clarescens, *Mitt.* . . . . . 100
—— comes, *Mitt.* . . . . . 109
—— compressifolius, *Mitt.* . . . 99
—— condensatus, *Mitt.* . . . . 93
—— confertissimus, *Mitt.* . . . 102
—— creperus, *Mitt.* . . . . . 98
—— crista-castrensis, *Mitt.* . . 96
—— cupressiformis, *Mitt.* . 96, 97, 98
—— curvatus, *Mitt.* . . . . . 109
—— curvirostris, *Mitt.* . . . . . 97
—— cygnicollum, *Mitt.* . . . . . 100
—— cyperoides, *Mitt.* . . 99, 100
—— decolor, *Mitt.* . . . . . 92
—— denticulatus, *Mitt.* . . . . 104
—— deplanatus, *Mitt.* . . . . . 105
—— distichaceus, *Mitt.* . . . . 105
—— Donianus, *Mitt.* . . . . . 104
—— echinatus, *Mitt.* . . . . . 110
—— erinaceus, *Mitt.* . . . . . 110
—— erraticus, *Mitt.* . . . . . 111
—— erythrocaulis, *Mitt.* . . . . 97
—— extentus, *Mitt.* . . . . . 95
—— extenuatus, *Mitt.* . . . . . 112
—— Fabronia, *Mitt.* . . . . . 99
—— flavescens, *Mitt.* . . . . . 93
—— fulvonitens, *Mitt.* . . . . . 109
—— Gardneri, *Mitt.* . . . . . 107
—— Gedeanus, *Mitt.* . . . . . 106
—— glaucocarpus, *Mitt.* . 113, 114
—— glauco-virens, *Mitt.* . . . . 103
—— Griffithii, *Mitt.* . . . . 108, 158
—— Harveyanus, *Mitt.* . . . . . 102
—— Himalayanus, *Mitt.* . . . . 113
—— Hookeri, *Mitt.* . . 108, 114, 158
—— humilis, *Mitt.* . . . . . 102
—— ichnotocladus, *Mitt.* . . . . 99
—— imponens, *Mitt.* . . . . . 96
—— inflexus, *Mitt.* . . . . . 92
—— intricatus, *Mitt.* . . . . 93, 94
—— Ivoreanus, *Mitt.* . . . . . 105
—— juliformis, *Mitt.* . . . . . 92
—— lacerulus, *Mitt.* . . . . . 114
—— lætus, *Mitt.* . . . . . 107
—— lancifolius, *Mitt.* . . 105, 110
—— lanytrichus, *Mitt.* . . 112, 158
—— leiophyllus, *Mitt.* . . . . . 101
—— lepidus, *Mitt.* . . . . . 98
—— leptocarpus, *Mitt.* . . . . . 102
—— leptorhynchoides, *Mitt.* . . 103
—— leptorhynchus, *Mitt.* . . . . 103
—— lignicola, *Mitt.* . . . . . 104
—— longitheca, *Mitt.* . . . . . 104
—— luridus, *Mitt.* . . . . . 109
—— lychnites, *Mitt.* . . . . . 114
—— macrocarpus, *Mitt.* . . 113, 114

Page

Stereodon macropodus, *Mitt.* . . 106
—— micans, *Mitt.* . . . . . 114
—— Montagnei, *Mitt.* . . . . . 108
—— myurus, *Mitt.* . . . . . 107
—— neckeroideus, *Mitt.* . . . . 103
—— nemoralis, *Mitt.* . . . . . 104
—— Nepalensis, *Mitt.* . . . . . 100
—— nictans, *Mitt.* . . . . . 98
—— nubigena, *Mitt.* . . . . . 109
—— orientalis, *Mitt.* . . . . . 111
—— orthothecius, *Mitt.* . . . . . 101
—— paleaceus, *Mitt.* . . . . . 103
—— pallescens, *Mitt.* . . . . . 99
—— pallidulus, *Mitt.* . . . . . 105
—— palustris, *Brid.* . . . . . 98
—— papillatus, *Mitt.* . . . . . 113
—— penicillatus, *Mitt.* . . . . . 112
—— Perrottetii, *Mitt.* . . . . . 110
—— perspicuus, *Mitt.* . . . . . 96
—— pilosulus, *Mitt.* . . . . . 113
—— pinetorum, *Mitt.* . . . . . 93
—— planulus, *Mitt.* . . . . . 111
—— plicatus, *Mitt.* . . . . . 106
—— polyanthus, *Mitt.* . . . 93, 94
—— polymorphus, *Mitt.* . . . . 115
—— praemollis, *Mitt.* . . . . . 106
—— propinquus, *Mitt.* . . . . . 96
—— prorepens, *Mitt.* . . . . 76, 107
—— pseudostriatus, *Mitt.* . . . . 114
—— psilurus, *Mitt.* . . . . . 112
—— pulchellus, *Mitt.* . . . . . 109
—— punctulatus, *Mitt.* . . . . . 101
—— remitens, *Mitt.* . . . . . 94
—— reticulatus, *Mitt.* . . . . . 101
—— revolutus, *Mitt.* . . . . . 97
—— rostellatus, *Mitt.* . . . . . 100
—— rostratus, *Mitt.* . . . 102, 103
—— rubicundus, *Mitt.* . . . 108, 158
—— russulus, *Mitt.* . . . . . 77, 94
—— sarmentosus, *Mitt.* . . . . . 110
—— Schreberi, *Mitt.* . . . . . 110
—— Schwægrichenii, *Mitt.* . . 108, 158
—— serrula, *Mitt.* . . . . . 114
—— Simlaensis, *Mitt.* . . . . . 95
—— Sommerfeltii, *Mitt.* . . . . 114
—— speciosus, *Mitt.* . . . . . 95
—— stissophyllus, *Mitt.* . . . . . 101
—— subdenticulatus, *Mitt.* . . . . 94
—— subhumilis, *Mitt.* . . . . . 102
—— subsimplex, *Mitt.* . . . . . 114
—— succosus, *Mitt.* . . . . . 101
—— surcularis, *Mitt.* . . . . . 112
—— tanytrichus, *Mitt.* . . . . . 158
—— taxirameus, *Mitt.* . . . . . 105
—— tenuirameus, *Mitt.* . . . . . 94
—— tenuis, *Mitt.* . . . . 113, 114
—— Thomsoni, *Mitt.* . . . . . 107
—— tristichus, *Mitt.* . . . . . 102
—— tuberculatus, *Mitt.* . . 101, 158
—— turgidus, *Mitt.* . . . . . 106

Page

Stereodon umbratus, *Mitt.* . . . . 113
—— venustus, *Mitt.* . . . . . 114
Stereophyllum, *Mitt.* . . . . . 117
—— Indicum, *Mitt.* . . . . . 117
Symblepharis breviseta, *Wils.* . . 12
—— densifolia, *Wils.* . . . . . 24
—— dilatata, *Wils.* . . . . . 12
—— Hookeri, *Wils.* . . . . . 12
Symphyodon Perrottetii, *Mont.* . 110
Syntrichia, *Brid.* . . . . . 5, 39
—— caninervis, *Mitt.* . . . . . 39
—— princeps, *Mitt.* . . . . . 39
—— ruralis, *Brid.* . . . . . 39
—— Schmidii, *C. Müll.* . . . . . 39
Syrrhopodon, *Hook. & Grev.* . 5, 39
—— croceus, *Mitt.* . . . . . 41
—— fasciculatus, *Hook. & Grev.* . 41
—— fastigiatus . . . . . 40
—— Gardneri, *Schw.* . . . . . 40
—— glaucus, *Schw.* . . . . . 25
—— Griffithii, *Mitt.* . . . . . 40
—— heterophyllus, *Mitt.* . . . . 40
—— Leprieurei, *Mont.* . . . . . 40
—— longisetaceus, *C. Müll.* . . . . 41
—— microphyllus, *Hook. & Grev.* 39
—— repens, *Harv.* . . . . . 41
—— revolutus, *Dot. & Molk.* . . 39
—— rigidus, *Hook. & Grev.* . . . 41
—— rufescens, *Hook. & Grev.* . . 39
—— spiculosus, *Hook. & Grev.* . . 39
—— Taylori, *Schw.* . . . . . 13
—— trachyphyllus, *Mont.* . . . . 40
—— tristichus, *Nees* . . . . . 40
Tayloria, *Hook.* . . . . . 5, 57
—— Boryana, *Mitt.* . . . . . 57
—— Indica, *Mitt.* . . . . . 57
—— Jacquemontii, *Schomp.* . . 57, 58
—— subglabra, *Mitt.* . . . . . 57
—— tenella, *Mitt.* . . . . . 57
Tetraplodon urceolatum, *Br. & Sch.* 58
Timmia, *Hedw.* . . . . . 6, 144
—— Austriaca, *Hedw.* . . . . . 144
Tortula, *Hedw.* . . . . . 5, 27
—— amplexifolia, *Mitt.* . . . . . 29
—— angustata, *Mitt.* . . . . . 28
—— angustifolia, *Hook. & Grev.* . 30
—— anomala, *Mitt.* . . . . . 28
—— spiculata, *Wils.* . . . . . 30
—— Bombayensis, *Mitt.* . . . . . 28
—— cuspidata, *Wils.* . . . . . 38
—— cylindrica, *Mitt.* . . . . 28, 29
—— cylindrotheca, *Mitt.* . . . . 30
—— Drummondii, *Mitt.* . . . . . 27
—— duriuscula, *Mitt.* . . . . . 27
—— fallax, *Wils.* . . . . . 34, 35, 36
—— flavescens, *Hook. & Grev.* 29, 30
—— flavescens, *Wils.* . . . . . 35
—— gregaria, *Mitt.* . . . . . 29
—— Indica, *Hook.* . . . . . 30
—— inermis, *Mont.* . . . . . 37

| | Page |
|---|---|
| Tortula lævipila, *Wils.* | 39 |
| —— longifolia, *Mitt.* | 28 |
| —— Northiana | 30 |
| —— orthodonta, *C. Müll.* | 28, 29 |
| —— rosulata, *Wils.* | 37 |
| —— ruralis, *Wils.* | 39 |
| —— squarrosa, *Brid.* | 27 |
| —— stenophylla, *Mitt.* | 28 |
| —— tortuosa | 28 |
| —— unguiculata | 29, 36 |
| —— vinealis, *Wils.* | 33, 34 |
| Trachyloma, *Brid.* | 5, 91 |
| —— arborescens, *Mitt.* | 91 |
| —— Indicum, *Mitt.* | 91 |
| —— planifolium, *Brid.* | 91 |
| —— Reinwardtii, *Mitt.* | 91 |
| —— Taylori, *Mitt.* | 92 |
| Trachypus, *Schw.* | 6, 127 |
| —— atratus, *Mitt.* | 129 |
| —— auriculatus, *Mitt.* | 129 |
| —— bicolor, *Schw.* | 127 |
| —— blandus, *Mitt.* | 127 |
| —— breviramens, *Mitt.* | 129 |
| —— Buchanani, *Mitt.* | 129 |
| —— cerinus, *Mitt.* | 128 |
| —— crispatulus, *Mitt.* | 129, 130 |
| —— cuspidiferus, *Mitt.* | 128 |
| —— declinatus, *Mitt.* | 129 |
| —— fuscescens, *Mitt.* | 128 |
| —— Harveii, *Mitt.* | 127 |
| —— Hornschuchii, *Mitt.* | 128 |
| —— plicæfolius, *Mitt.* | 129 |
| —— procumbens, *Mitt.* | 127 |
| Trematodon, *Rich.* | 5, 12 |
| —— conformis, *Mitt.* | 12 |
| —— decipiens, *Mitt.* | 13 |
| —— longicollis, *Rich.* | 12 |
| —— paucifolius, *C. Müll.* | 13 |
| —— sabuloseus, *Griff.* | 13 |
| —— Schmidii, *C. Müll.* | 12 |
| Trichostomum, *Hedw.* | 27 |
| —— Bombayense, *C. Müll.* | 28 |
| —— Bombayense, *Wils.* | 30 |
| —— brachyphyllum, *Wils.* | 30 |
| —— canescens, *Hedw.* | 45 |
| —— corniculatum, *Schw.* | 28 |
| —— cylindricum, *C. Müll.* | 28 |
| —— delicatulum, *Wils.* | 10 |
| —— Indicum, *Willd.* | 46 |
| —— lanuginosum, *Hedw.* | 45 |
| Trichostomum pellucidum, *Wils* | 13 |
| —— rubellum, *C. Müll.* | 27 |
| —— subsecundum, *Hook. & Grev.* | 45 |
| —— tophaceum, *Brid.* | 35 |
| —— tortile, *Wils.* | 35 |
| —— trifarium, *Auct.* | 36 |
| Ulota, *Brid.* | 5, 49 |
| —— robusta, *Mitt.* | 49 |
| —— Schmidii, *Mitt.* | 49 |
| Voitia, *Hornsch.* | 5, 56 |
| —— Hookeri, *Mitt.* | 56 |
| —— nivalis, *Wils.* | 57 |
| —— stenocarpa, *Wils.* | 57 |
| Webera, *Hedw.* | 5, 65 |
| —— acuminata | 66 |
| —— albicans, *Mitt.* | 66 |
| —— annotina, *Schw.* | 66 |
| —— cruda, *Schw.* | 66 |
| —— delicatula, *Mitt.* | 66 |
| —— elongata, *Mitt.* | 65, 66 |
| —— flexuosa, *Mitt.* | 66 |
| —— Himalayana, *Mitt.* | 66 |
| —— polymorpha, *Sch.* | 7, 65 |
| —— pyriformis, *Hedw.* | 66 |
| —— rigescens, *Mitt.* | 65 |
| Weissia, *Hedw.* | 5, 27 |
| —— bartramioides, *Griff.* | 59 |
| —— controversa, *Hedw.* | 27 |
| —— crispula, *Hedw.* | 24, 25 |
| —— edentula, *Mitt.* | 27 |
| —— Indica, *Wils.* | 24, 25 |
| —— linearifolia, *Hornsch.* | 27 |
| —— Macclelandi, *Griff.* | 40 |
| —— recurvirostris, *Mitt.* | 27 |
| —— serrulata, *Wils.* | 23 |
| —— Templetoni, *Griff.* | 55 |
| Zygodon, *Hook. & Tayl.* | 5, 47 |
| —— acutifolius, *C. Müll.* | 47 |
| —— Brebissonii, *Br. & Sch.* | 47 |
| —— brevisetus, *Wils.* | 47 |
| —— conoideus, *Mitt.* | 47 |
| —— cylindricarpus, *C. Müll.* | 47 |
| —— intermedius, *Br. & Sch.* | 47 |
| —— Menziesii, *Arn.* | 48 |
| —— obtusifolius, *Hook.* | 47 |
| —— pusillus, *C. Müll.* | 32 |
| —— strictus, *Mitt.* | 47 |
| —— tetragonostomus, *A. Braun* | 47 |
| —— viridissimus, *Brid.* | 47 |


THE END.

Printed by TAYLOR and FRANCIS, Red Lion Court, Fleet Street.